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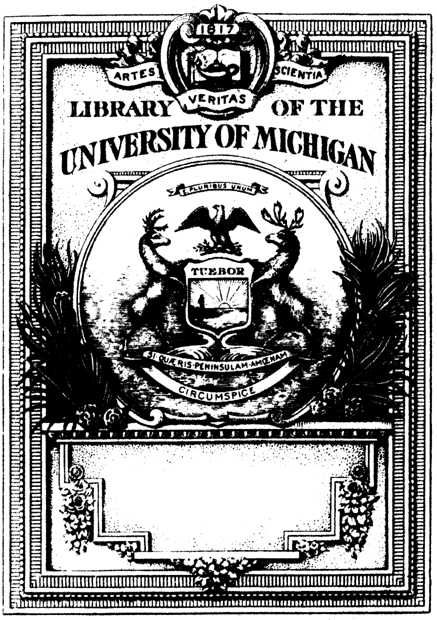

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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
E. LESTER JONES, DIRECTOR

SUPPLEMENT
TO
UNITED STATES COAST PILOT
PHILIPPINE ISLANDS

PART I

LUZON, MINDORO, AND VISAYAS

JANUARY 1, 1925

NOTE.—This supplement gives the more important corrections and additions affecting the text of the Coast Pilot volume since its publication. The supplement is so printed that it may be cut up and the slips inserted on the pages affected.

WASHINGTON
GOVERNMENT PRINTING OFFICE
1925

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U. S. Govt.
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6-5-1925

IMPORTANT NOTICE.—Supplements to the United States Coast Pilots are issued at least once each year and give all available information for bringing the Coast Pilots up to date. The Coast and Geodetic Survey must depend in a great measure upon outside sources of information pending a complete revision of a volume. Mariners and others will therefore realize the importance and great desirability of cooperation in this work, and are urgently requested to forward to the Director, United States Coast and Geodetic Survey, Washington, D. C., directly or through one of the field stations of the Survey, any information affecting the Coast Pilots or charts that may come to their notice, as well as any suggestions that they may have for increasing the value of these publications.

Page 28.

Time signals.—The radio transmission is by a 5-kilowatt spark on a wave length of 2,700 meters and by arc on a wave length of 5,200 meters. The weather warnings immediately follow the time signals.

Page 29.

Radio service.—Third sentence, substitute the following: "Information concerning the United States commercial radio stations of the United States should be addressed to the Bureau of Navigation, Department of Commerce, Washington, D. C. For list of the radio stations of the United States, including shore stations, merchant vessels, and Government vessels; Radio Communication Laws and Regulations of the United States; and Amateur Radio Stations of the United States, address the Superintendent of Documents, Government Printing Office, Washington, D. C.; price 15 cents each; excepting Amateur Radio Stations, price 25 cents each." Changes or additions to the stations and to the laws and regulations are published in bulletins issued monthly; price 5 cents per copy or 25 cents per year.

The International List of Radio Stations of the World (edition in English) can be procured from the International Bureau of the Telegraphic Union (Radiotelegraphic Service), Berne, Switzerland. In addition to the information contained in the list of the United States stations published by the Bureau of Navigation, the international list shows geographical locations, normal ranges, in nautical miles, radio systems, and rates. Supplements to the international list will be issued monthly and will contain new stations and tables of alterations. Inquiries as to the subscription prices of these lists should be made direct to the Berne bureau at the address given above. Remittances to Berne should be made by international postal money orders.

MEW

The insular government radio stations are as follows:

Coastal stations (insular government radio stations) listen in on a 600-meter wave length for ship messages about 10 minutes each hour while open for business

Station	Latitude N.			Longitude E.			Call signal	Wave length
	°	′	″	°	′	″		
Batangas	13	47	00	121	00	00	KPC	2, 700
Amuguis	13	15	00	122	40	00	KPB	600–1, 200
San Jose, Mindoro	12	21	00	121	04	00	KIY	600–1, 200
Culion	11	53	30	120	01	00	KPJ	600–1, 200
Cuyo	10	50	00	121	00	00	KIX	600–1, 200
Puerto Princesa	9	45	00	118	44	00	KIV	600–1, 200
Iloilo	10	42	00	122	34	00	KPM	600–1, 200
Cebu	10	18	00	123	53	00	KPI	600–1, 200
San Francisco Camotes	10	38	00	124	22	00	KPY	300–600
Mati	6	57	00	126	14	00	KPZ	600–952
Malita	6	24	00	125	36	00	KPW	600–1, 200
Davao	7	04	00	125	37	00	KIF	600–1, 200
Lebak	6	33	00	124	03	00	KPX	600–957–1, 200
Malabang	7	35	00	124	05	00	KIZ	600–1, 200
Malangas	7	38	00	123	02	00	KPV	600–900
Zamboanga	6	55	00	122	02	00	KIW	1, 250
Isabella de Basilan	6	42	00	121	58	00	KPN	200
Jolo	6	03	00	121	00	00	KIL	600
Siasi	5	33	00	120	49	00	KED	600
Bongao	5	02	00	119	46	00	KEO	600–952
Cagayan, Sulu	6	59	00	118	31	00	KEV	750
Balabac	7	59	00	117	04	00	KEW	600–1, 200

Add the following paragraphs:

Radiocompass bearings.—The Naval Communications Service will furnish radio bearings to mariners of all vessels equipped with radiotelegraph transmitters. While the use of these bearings should not lead a mariner to neglect other precautions, such as the use of the lead, etc., during a fog, these bearings will greatly reduce the dangers to navigation for mariners who are compelled for any reason to proceed during foggy or misty weather.

These radiocompass stations are provided, primarily, to assist the mariner in closing the land during fog or poor visibility, but they may also be used to obtain the position of vessels at sea in radiocompass range, about 150 miles, when for any reason positions can not be obtained by other means. The maximum distance for which bearings from these stations are accurate is 150 miles. But accurate positions can not be plotted when more than 50 miles from the shore on Mercator charts, for the Mercator projection introduces a distortion of the true bearing.

Radiocompass stations are divided into two classes: (*a*) Single stations, operating independently and furnishing a single bearing. These stations are located with a view of giving service to ships at a distance of not over 150 miles from the station. (*b*) Harbor entrance groups. All stations in harbor entrance groups are connected to and controlled by the master station. All stations of the group take bearings simultaneously, and these bearings are transmitted to the ship requesting them by the control station. The purpose of these stations is to lead mariners to the light vessels off harbor entrances.

Where only one radiocompass station is available, the mariner may fix his position by two or more bearings from the station with the distance run between, or may use the bearings as a line of position or as danger bearing. Or the bearing may be crossed with a line of position obtained from an observation of an astronomical body to establish a fix.

Wave lengths.—All independent and group radiocompass stations keep watch on *800 meters.* Only this wave should be used to call and work with these stations. During the first 10 minutes of each hour, during clear weather, radiocompass stations ordinarily will not be guarding the 800-meter wave. Ships are requested to confine their requests for bearings during clear weather to the remaining 50 minutes of the hour as far as practicable. During the remaining 50 minutes and at all times during inclement weather all radiocompass stations will be guarding continuously the 800-meter wave.

Calling a radiocompass station.—To obtain a bearing from independent radiocompass stations, call the station from which the bearing is desired in the usual manner and request bearings by means of the conventional signal given hereafter. Simultaneous bearings from two or more compass stations can be obtained by making the call include the other compass stations desired. To obtain bearings from the harbor entrance compass stations, carry out the procedure previously given. The compass-control station only will answer.

Conventional signals.—The following abbreviated signals will be used:

Signal	Meaning
QTE?	What is my true bearing?
QTE	Your true bearing is -------- degrees from -------- radiocompass station.

The following radiocompass stations will be of use for vessels approaching the west coast of the United States:

Stations	Call letters	Position	Arc of calibration
			Degrees
Pachena Point, Vancouver	VAD	Lat. 48° 44′ N., long. 125° 06 W	
Cattle Point, Wash	NFN	Lat. 48° 27′ 04″ N., long. 122° 57′ 45″ W	120–280
Smith Island, Wash	NFH	Lat. 48° 19′ 04″ N., long. 122° 50′ 39″ W	0–360
New Dungeness, Wash	NFT	Lat. 48° 10′ 36″ N., long. 123° 07′ 51″ W	240–110
Tatoosh, Wash [1]	NPD	Lat. 48° 23′ 41″ N., long. 124° 44′ 13″ W	180–90
Klipsan Beach, Wash	NZS	Lat. 46° 27′ 53″ N., long. 124° 03′ 16″	195–340
Destruction Island, Wash	NOJ	Lat. 47° 40′ 29″ N., long. 124° 29′ 02″	
Fort Stevens, Oreg	NZS	Lat. 46° 11′ 32″ N., long. 123° 59′ 15″ W	175–335
Empire, Oreg	NPF	Lat. 43° 23′ 03″ N., long. 124° 18′ 58″ W	230–10
Eureka, Calif	NPW	Lat. 40° 41′ 49″ N., long. 124° 16′ 33″ W	204–25
Point Reyes, Calif	NLG	Lat. 38° 02′ 13″ N., long. 122° 59′ 36″ W	115–5
Point Montara, Calif	NLH	Lat. 37° 32′ 02″ N., long. 122° 31′ 07″ W	171–360
Farrallon Island, Calif	NPI	Lat. 37° 41′ 58″ N., long. 122° 59′ 56″ W	0–360
Point Arguello, Calif. [2]	NPK	Lat. 34° 34′ 38″ N., long. 120° 38′ 32″ W	135–360
Point Hueneme, Calif	NMD	Lat. 34° 08′ 43″ N., long. 119° 12′ 30″ W	135–305
Point Fermin, Calif	NPX	Lat. 33° 42′ 19″ N., long. 118° 17′ 37″ W	90–295
Point Loma, Calif. [3]	NPL	Lat. 32° 42′ 21″ N., long. 117° 15′ 17″ W	185–250
Imperial Beach, Calif	NPL	Lat. 32° 35′ 14″ N., long. 117° 07′ 54″ W	180–340

[1] Bearings furnished in the sector 232° to 264° should be used with caution until reported unreliability has been investigated.

[2] The calibrated area between 135° and 160° is overland, and bearings in this sector should therefore be used with caution until several months of checking have shown what accuracy may be expected there.

[3] Out of commission at present. Notice will be given when operation is resumed.

NOTE.—The arc of calibration is a sector of the circle of which the compass coil at the radio station is the center; the bearings are from the station, clockwise. Compass bearings are reliable only when they fall within the calibrated arcs.

PROCEDURE IN DETAIL

(*a*) A ship calling the radiocompass station or compass control station should make the abbreviation "QTE?" ("What is my bearing?"). This request will be answered by the radiocompass station or control station, and when ready to observe the radio bearing it will send the signal "K," indicating to the ship to commence "testing"; that is, repeating its distinguishing signal for a period of 50 seconds. The signal should be made slowly with the dashes considerably prolonged.

(*b*) The testing should be made on 800 meters, upon the completion of which the ship should await reply from the radiocompass station.

(*c*) The radiocompass station or control station will then reply repeating the abbreviation "QTE" ("Your bearing was ——— degrees from ———"), followed by the bearing in degrees given by a group of three figures 000 to 360, indicating the true bearing in degrees of the ship station from the radiocompass station, and then the time group giving the time of observations in local standard time. In the case of more than one radiocompass connected by land line only, the station originally called will answer. This station will combine all the bearings taken by itself and associated stations into one message, which gives each bearing observed immediately after the name of the station making the observation. *All compass stations transmit on 800 meters.*

Danger from reciprocal bearings.—Attention is invited to the fact that when a single bearing is furnished there is a possibility of an error of approximately 180°, as the operator at the compass station can not always determine on which side of the station the vessel lies. Certain radiocompass stations, particularly those on islands or extended capes, are equipped to furnish two corrected true bearings for any observation. Such bearings when furnished vessels may differ by approximately 180°, and whichever bearing is suitable should be used.

Caution.—Mariners receiving bearings which are evidently the approximate reciprocal of the correct bearing should never attempt to correct these bearings by applying a correction of 180°, as such correction would not include the correction necessary on account of deviation at the compass station. An error of as large as 30° may be introduced by mariners applying an arbitrary correction of 180° to such bearings. Vessels receiving bearings manifestly requiring an approximate 180° correction should request the other bearings from the radiocompass station if not previously furnished.

Bearings, except in the case of approximately reciprocal bearings should be accurate within 2° of arc provided the transmitting equipment on board vessels is tuned sharply to 800 meters. Operators should use sufficiently wide coupling to obtain low decrement. If radio transmitters are not tuned sharply, it is difficult to obtain bearings that are sufficiently accurate for navigational purposes. When bearings from three or more compass stations are not over 2° of arc in error, but do not meet at a fixed point, the geometric center of the triangle formed by the bearings can generally be taken as the approximate position of the vessel.

Mariners until thoroughly familiar with the system are advised to use radiocompass stations frequently, especially in clear weather, when positions of vessels can be accurately fixed in order to accustom operators to the procedure and to acquaint themselves with the degree of accuracy and dependability of bearings furnished by the radiocompass stations.

Reports.—In order that the operation of shore radiocompass stations may be checked, mariners obtaining bearings are requested to forward a brief report to the Director Naval Communications, Navy Department, Washington, D. C., containing the following particulars: (1) Name of ship; (2) name of radiocompass station; (3) date and local standard time at which radio bearing was taken; (4) bearings given by radio station; (5) estimated position of ship at above time and dates by methods other than radio; (6) the probable degree of accuracy of the estimated position; (7) weather conditions at above time; (8) remarks, if any; (9) signature of master or responsible navigating officer.

There is no charge for bearings furnished by the U. S. Naval Radiocompass Station.

Radio fog signals.—The following radio fog signals are operated on the Pacific coast by the United States Lighthouse Service: San Francisco Light Vessel, Calif., series of double dashes for 30 seconds, silent 30 seconds; Blunts Reef Light Vessel, single dashes for 30 seconds, silent 35 seconds; Columbia River Light Vessel, series of 3 dashes for 20 seconds, silent for 20 seconds; Swiftsure Bank Light Vessel, series of 2 dashes for 35 seconds, silent for 25 seconds.

These radio fog signals are intended for the use of vessels equipped with radiocompass. By reason of this radiocompass (also termed radio direction finder) the bearing of the radio fog signal station may be determined with an accuracy of approximately 2° and at distances considerably in excess of the range of visibility of the most powerful coast lights. The apparatus is simple and may be operated by the navigator without the assistance of a radio operator or without knowledge of the telegraph code. The radio direction-finding apparatus consists of a radio receiving set, similar in operation to those used for radio telegraph or telephone reception, and a rotatable coil of wire in place of the usual antenna. By rotating the coil the intensity of the signal received from the transmitting station is caused to vary, and by noting the position of the coil when the signal is heard at its minimum intensity the bearing of the transmitting station is readily obtained.

The signals from the light vessels have definite characteristics for identifying the stations, as have the flashing lights and sound fog signals, and bearing may be obtained with even greater facility than sight bearings on visible objects. The radio fog signals are transmitted on a wave length of 1,000 meters, which is exclusively reserved for this purpose to avoid interference. The stations transmit continuously during thick weather and also for one-half hour twice each day, beginning at 9 a. m. and 3 p. m., regardless of weather conditions.

Radio fog signals on the San Francisco Light Vessel and on the Blunts Reef Light Vessel sound the station characteristic, on 1,000-meter wave lengths, when there is a fog or thick haze within a distance of approximately 10 miles from the light vessel. The signal may be heard by vessels for a distance of 25 miles or more from the light vessel. Radio fog signals on the San Francisco and Blunts Reef Light Vessels will be sounded on 1,000-meter wave lengths upon request of a vessel desiring to test or calibrate its radiocompass or to check its position.

At about 8 a. m., 12 noon, and 8 p. m. daily, except during foggy weather, each light vessel will broadcast, on 600-meter wave lengths, weather reports pertaining to existing weather conditions in the immediate vicinity of the light vessel and will furnish such weather reports at other times to vessels requesting them. These reports cover only actual weather conditions, and forecasts can not be furnished.

Masters of vessels are advised that there is only one radio operator on light vessels and that he is on watch and listens in during the first 15 minutes of each hour from 8 a. m. until 8.15 p. m. daily when there is no fog, and therefore requests, on 600-meter wave lengths, that the signal be sounded should be made at such times.

The radio fog signal on Blunts Reef Light Vessel, Columbia River Light Vessel, and Swiftsure Bank Light Vessel will be operated during clear weather for the first 15 minutes of each even hour from 10 p. m. to 6 a. m. The radio operator on these vessels maintain watch on 600-meter wave length during the first 15 minutes of each hour from 8 a. m. to 8.15 p. m. daily, except during foggy weather, and will transmit the vessel's radio fog signal for a reasonable length of time upon request from any vessel desiring to obtain bearings by radiocompass.

Masters of vessels making use of the radio fog signals transmitted during clear weather are requested to advise the Superintendent of Lighthouses, San Francisco, Calif., by letter if the increased service is of value to them and if they desire to have such service continued or extended to cover more frequent periods in the future.

A general description of this method of navigation and the instruments required may be obtained from the Commissioner of Lighthouses, Washington, D. C., upon request. The Bureau of Standards Scientific Paper No. 428, the Radio Direction Finder and Its Application to Navigation, may be obtained from the Superintendent of Documents, Washington, D. C., for 15 cents.

PAGE 37.

Forest Belle Rock is reported as not existing and has been expunged from the charts.

PAGE 38.

Bashi Rocks are reported as not existing and have been expunged from the charts.

A reef 6 miles long has been reported to exist in latitude 20° 25′ N., longitude 119° 23′ E. No further details were given. Later reports give the existence of this reef as doubtful.

PAGE 41.

The Babuyan Islands.—Owing to the reported uncertainty of the position of this group, including Wyllie Rocks, and the uncertainty of the currents in the vicinity, these rocks should not be approached closer than 10 to 15 miles.

PAGE 61.

Balingasag Bay.—The black can buoy, mentioned in the supplement dated January 1, 1924, as marking the north side of the entrance, has been discontinued.

PAGE 64.

The channel into Port Masinloc north of Salvador Island is marked by 2 red and 4 black buoys. A small wharf extends out from the point about 1 mile southward of the town of Masinloc.

PAGE 68.

Cubi Point.—The red buoy has been changed to a gas buoy showing one white flash every three seconds.

PAGE 70.

Los Cochinos.—The northern channel between the rocks is obstructed by a sunken rock a few meters east of mid-channel. The least depth on the rock is one-half fathom.

Guardia Shoal.—The gas buoy has been replaced by a black second-class can buoy.

PAGES 72–73.

The naval authorities have established a torpedo range between San Nicolas Shoal and Sangley Point, described as follows: "East end located 4,500 yards 280° true from Sangley Point Light. Range extends from there 3,500 yards 241° true and consists of spar buoys at 0, 1,000, 2,000, 2,500, and 3,000 yards and a nun buoy at 3,500 yards which for S/Ms is the firing point. Range may later be extended in direction of San Nicolas Shoal. Range lies south of traffic between San Nicolas Shoal and Manila Harbor."

PAGE 73.

Sangley Point.—The light is obscured by the conical roof of the northern fuel oil tank, over a maximum arc of 25° between 97 and 122°. The shoal making southward of Sangley Point has been dredged to a depth of 22 feet, the inner and outer edges of the channel at this point being marked by buoys.

Manila, fourth paragraph: Anchorage outside the breakwater is restricted to the area northward of a line bearing 255° from the flashing red light on the south end of the south breakwater.

Quarantine.—The disinfecting and detention station is at Mariveles, but vessels having no infectious or contagious disease aboard await pratique off the breakwater entrance at Manila.

Page 75.

Dredging operations are under way in Cañacao Bay, and no reliance should be placed on the charted positions of the buoys, as they are liable to be shifted. Mooring buoys Nos. 21, 22, 23, 24, 25, and 26 should be expunged from the chart. They no longer exist, or have been moved farther into the bay. A lighted buoy, fixed white, has been placed 200 yards 71° from the end of the dock at the Cavite Navy Yard.

Compass ranges.—Additional bearings have been determined, as follows:

	°	′
South radio to Mount Sungay	161	38
South radio tower to Mount Maquiling	142	00
South radio tower to Mount Banahao	127	07
South radio tower to Mount Susundalaga	115	15
South radio tower to Mount Sembrano	103	07
South radio to Las Piñas Church	97	21
South radio tower to Parañaque Church	83	42
Sangley light to northwest radio tower	257	00
Sangley light to Cavite water tank	176	00

The bearings (true) of the ranges formed by the radio towers themselves are as follows:

	°	′
Northeast tower to south tower	215	45
Northwest tower to south tower	155	45
Northwest tower to northeast tower	95	45

The towers, however, are very close together, of open steel construction, and are more or less flexible, being subject to temperature and wind movements which, with the probable error of determination, may introduce an uncertainty of as much as 1° into the observations of the bearings. Particular care must also be taken to get good contacts; as the towers are of equal size, the nearer one is liable to obscure the actual contact of the range for an appreciable interval.

Page 83.

The black buoy marking the extreme southern edge of the reef making out from Pagbilao Bay, has been discontinued.

Page 104.

Bulan.—A fixed red light is displayed from a 28-foot concrete beacon back of the beach, height 32 feet above high water, visible 7 miles over an arc of 164° from N. 15° W. to S. 31° E.

Sorsogon.—The Commercial Pacific Cable Co. has established a triangular beacon painted white, which, with a similar mark on the cable hut ashore, indicates the line of their cable at Sorsogon. Position of beacon latitude 12° 57′ 47″ N., longitude 124° 00′ 10″ E. The cable at Bacon is not marked, but two positions on the line are given as follows: Latitude 13° 03′ 05″ N., longitude 124° 02′ 44″ E.; latitude 13° 05′ 30″ N., longitude 124° 06′ 14″ E. Vessels are warned to keep clear of the cable.

Page 125.

Directions for Daet River.—The channel buoys have been discontinued.

PAGE 132.

Lamit Islands, second paragraph: The anchorage southward of the western Bani Island is obstructed by a 1½-fathom shoal. Good anchorage may be found southward and southwestward of Anchor Island in 4 to 8 fathoms, sticky mud bottom.

Directions, second paragraph: The west end of the western Bani Island can be rounded at a distance of one-fourth mile. The anchorage southward of the island is obstructed by a shoal and can only be used by small vessels.

PAGE 150.

A fixed red light is exhibited from a white concrete beacon on the beach at Sabang.

PAGE 153.

Rapurapu Strait.—The buoy formerly marking the south edge of Derickson Reef has been moved to the south edge of the 2½-fathom shoal southward of Derickson Reef.

PAGE 154.

Batan Harbor.—The spar buoy marking the 7½-foot shoal off the wharf has been discontinued.

Coal Harbor.—The channel leading to the wharf is marked by two black and one red buoy.

PAGE 175.

Panagatan Cays.—Both cays are wooded.

PAGE 179.

Mangarin Bay.—Additional information: Good water may be obtained, but only in limited amounts and inconveniently. Supplies are not obtainable. Some provisions may be secured from the sugar company's stores. There are no stevedoring facilities. Vessels must enter and clear from Manila, there being no customhouse at this port.

PAGE 181.

Shoals off Mangarin Wharf.—The outer 1½-fathom shoal is marked by a black can buoy moored in 27 feet of water, mud bottom.

PAGE 210.

Iloilo, *Pilotage*, second paragraph: The Iloilo City light has been permanently discontinued.

PAGE 211.

Siete Pecados.—Line 5: A red nun buoy marks the one-fourth fathom shoal southward of the islands.

PAGE 214.

Iogiog Bank.—A red nun buoy marks the northern end; a black can buoy marks the eastern side opposite Pandan Point; and a gas buoy showing one white flash every 3 seconds marks the southern end of this bank.

Page 216.

New Washington.—The entrance to the Lagatic River is now marked by one red and one black buoy.

Page 233.

Pulupandan.—The wharf at Pulupandan, on the south side of Pandan Point, has 26 feet of water alongside at low water, mud bottom. Ocean-going vessels call here for sugar during the milling season. The best approach is from the southward. Round the gas buoy which marks the south end of Iogiog Bank and steer a course about 21° for the head of the wharf. Anchor about 100 yards off the fishtraps with the Ma-ao Dock bearing 16° true and the old dock bearing 90° true. During the northeast monsoon a vessel seldom if ever swings inshore on the turn of the tide, and loading from lighters is greatly facilitated by the smoother water obtained in anchoring close inshore. In going alongside the wharf, a south running tide should be chosen and the port anchor dropped well off the wharf. Customs inspectors and stevedores are usually brought from Iloilo and a vessel can save time by arranging to clear without returning to that port. Practically no supplies can be obtained at Pulupandan.

Page 238.

Dumaguete.—A stone jetty with dock has been constructed at the northern end of Dumaguete, near the stream northward of Stillman Institute. The jetty is approximately 1,000 feet long, extending east and northeastward. The end of the dock is 50 feet wide, with a depth of 3 fathoms alongside.

Page 239.

A black can buoy marks the edge of the shoal water off Canamay Point at the south side of South Bais Bay.

Page 240.

A red nun buoy marks the edge of the shoal water southeastward of Arboles Point.

The wharf of the Central Azucarera de Bais is on the south shore of South Bais Bay.

Page 242.

A fixed red light is displayed from a concrete beacon on the beach at Guijulngan.

Page 243.

Refugio Island.—A black can buoy marks the edge of the reef northward and a red nun buoy southward of the island.

Page 245.

Danao River.—A fixed red light is shown from a concrete beacon near the ruins of the wharf.

Page 247.

Malapascua Island.—Malapascua Light, flashing white every 3 seconds, is exhibited, 112 feet above high water, from a white steel framed tower.

PAGE 249.

Tuburan Bay.—A set of white triangular range marks having a black vertical stripe through the center have been erected on the beach. The marks in range bearing 142° true (141° mag.) will lead between the reefs to the anchorage.

PAGE 250.

Asturias.—The diamond-shaped beacons mark the channel between the reefs. Steer midway between the beacons, heading for the barrio of Langob on a 113° true (112° mag.) course.

Balamban.—A fixed red light, visible 7 miles, is exhibited from a white concrete pillar erected on the beach in front of the town.

PAGE 252.

Dumanjug.—A fixed red light, visible 7 miles, is exhibited from a white concrete pillar erected on the beach at Tangil.

PAGE 260.

Cebu Harbor.—The list of lights, etc., of the Philippine Islands is now published by the Bureau of Commerce and Industry instead of the Bureau of Customs, as formerly.

A small 3¾-fathom shoal of live coral ⅓ mile west of Opon light is marked by a black and red horizontally striped can buoy.

Bantolinao Point.—Last line, for "beacon" read "black can buoy."

PAGE 261.

Directions, northern approach to Cebu.—Lines 5 and 6, for "beacon" read "black can buoy."

PAGE 278.

Tagbilaran.—A 12-foot channel, about ¾ mile long, leading to a stone dock northward of Tagbilaran is marked by seven stone beacons, with perches. The port-hand beacons are four in number, with black square day marks on the perches, and the starboard-hand beacons three in number, with red conical marks on the perches.

PAGE 288.

Good shelter may be found in the channel southward of Gilbert Island in 4 fathoms, smooth bottom, entering from eastward.

PAGE 290.

Caterman.—Vessels usually load at Cawayan. The channel into Cawayan is narrow but is marked by two beacons. The kedge anchor is used to hold the vessels into the swell.

PAGE 291.

Laoang.—Two additional wharves have been built at the town of Laoang.

PAGE 300.

The channel at *Oras River entrance* is shifting. The island formerly in mid-channel has disappeared, and the point on the west side has been extended considerably. The small island farther up the river has been joined to the south shore, thus forcing main channel to the northward. There is a small wharf and camarin near the mouth of the river.

PAGE 314.

Surigao Strait.—The master of the steamer *Narbo* reports that his compasses were affected by "local attraction" while passing through Surigao Strait and along the south coast of Negros en route to Iloilo. The observed azimuth showed that the standard compass varied as much as 7°.

PAGE 325.

Biliran Strait.—A concrete beacon with flashing white light has been placed on the edge of the reef on the southern side of the strait near its narrowest part.

PAGE 338.

Tacloban.—A stone dock, approximately 300 feet long, with a depth of 2½ fathoms alongside, has been constructed at the southwestern end of the water front at Tacloban.

PAGE 339.

Substitute the following:

COAST PILOTS AND FIELD STATIONS OF THE COAST AND GEODETIC SURVEY

COAST PILOTS

	Price
U. S. Coast Pilot, Atlantic Coast, Section A, from St. Groix River to Cape Cod	$0.75
U. S. Coast Pilot, Atlantic Coast, Section B, from Cape Cod to New York, including Long Island Sound	.75
U. S. Coast Pilot, Atlantic Coast, Section C, Sandy Hook to Cape Henry, including Delaware and Chesapeake Bays	.75
U. S. Coast Pilot, Atlantic Coast, Section D, Cape Henry to Key West	.75
U. S. Coast Pilot, Atlantic Coast, Section E, Gulf of Mexico, from Key West to the Rio Grande	.75
U. S. Coast Pilot, West Indies, Porto Rico, and Virgin Islands	.75
Inside Route Pilot, coast of New Jersey	.30
Inside Route Pilot, New York to Key West	.30
Inside Route Pilot, Key West to New Orleans	.30
U. S. Coast Pilot, Pacific Coast, California, Oregon, and Washington	.75
U. S. Coast Pilot, Pacific Coast, Alaska, Part I, from Dixon Entrance to Yakutat Bay	.75
U. S. Coast Pilot, Pacific Coast, Alaska, Part II, Yakutat Bay to Arctic Ocean	.75
U. S. Coast Pilot, Hawaiian Islands	.50
U. S. Coast Pilot, Philippine Islands, Part I, Luzon, Mindoro, and Visayas	.75
U. S. Coast Pilot, Philippine Islands, Part II, Palawan, Mindanao, and Sulu Archipelago	.75

FIELD STATIONS

Boston, Mass., Appraisers Building, 408 Atlantic Avenue.
New York, N. Y., 311–12, Maritime Exchange Building.
New Orleans, La., Room 314, Customhouse.
San Francisco, Calif., Room 305–6, Customhouse.
Seattle, Wash., Room 202, Burke Building.
Manila, P. I., Intendencia Building.

At these stations complete files of the United States Coast and Geodetic Survey charts, Coast Pilots, Current Tables, Tide Tables, and other publications relating to navigations may be consulted and information affecting navigation obtained without charge. Light Lists, Buoy Lists, and Notices to Mariners are kept for sale or for free distribution to mariners.

PAGE 348.

Special regulations for vessels maneuvering in the Pasig River.—Vessels maneuvering in the Pasig River, and not under way, shall carry at night, besides the anchor lights, a red light which shall be placed 4 feet below the white anchor light in the same vertical line, and also the side lights. As soon as the vessel is under way these lights shall be lowered, and the regular masthead light shall be lighted. At daytime the International Code letter "M" shall be displayed until the vessels have cleared the mouth of the river. (C. A. O. 68.)

○

JUN 12 1925

Serial No. 308

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Suppl.
1925

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
E. LESTER JONES, DIRECTOR

SUPPLEMENT

TO

UNITED STATES COAST PILOT

PHILIPPINE ISLANDS

PART II

PALAWAN, MINDANAO, AND SULU ARCHIPELAGO

JANUARY 1, 1925

NOTE.—This supplement gives the more important corrections and additions affecting the text of the Coast Pilot volume since its publication. The supplement is so printed that it may be cut up and the slips inserted on the pages affected.

WASHINGTON
GOVERNMENT PRINTING OFFICE
1925

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Suppl.
1925

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6-5-1925

Important notice.—Supplements to the United States Coast Pilots are issued at least once each year and give all the available information to bring the Coast Pilots up to date. The United States Coast and Geodetic Survey must depend in a great measure on outside sources of information pending the complete revision of a volume. Mariners and others will therefore realize the importance and great desirability of cooperation in this work and are invited to forward to the Director, Coast and Geodetic Survey, Washington, D. C., either directly or through one of the field stations, any information affecting the Coast Pilots or Charts, as well as suggestions for increasing their value to the mariner.

CORRECTIONS AND ADDITIONS

Page 18.

Radio Service—Time signals.—The radio transmission is by a 5-kilowatt spark on a wave length of 2,700 meters and by arc on a wave length of 5,200 meters. The weather warnings immediately follow the time signals.

Third paragraph, third sentence, substitute the following: "Information concerning the United States commercial raido stations of the United States should be addressed to the Bureau of Navigation, Department of Commerce, Washington, D. C. For list of the radio stations of the United States, including shore stations, merchant vessels, and Government vessels: Radio Communication Laws and Regulations of the United States; and Amateur Radio Stations of the United States, address the Superintendent of Documents, Government Printing Office, Washington, D. C.; price 15 cents each, excepting Amateur Radio Stations, price 25 cents each." Changes or additions to the stations and to the laws and regulations are published in bulletins issued monthly; price 5 cents per copy or 25 cents per year.

The International List of Radio Stations of the World (edition in English) can be procured from the International Bureau of the Telegraphic Union (Radiotelegraphic Service), Berne, Switzerland. In addition to the information contained in the list of the United States stations published by the Bureau of Navigation, the international list shows geographical locations, normal ranges in nautical miles, radio systems, and rates. Supplements to the international list will be issued monthly and will contain new stations and tables of alterations. Inquiries as to the subscription prices of these lists should be made direct to the Berne bureau at the address given above. Remittances to Berne should be made by international postal money orders.

The insular government radio stations are as follows:

Coastal stations (Insular Government radio stations) listen in on a 600-meter wave length for ship messages about 10 minutes each hour while open for business

Station	Latitude N.			Longitude E.			Call signal	Wave length
	°	′	″	°	′	″		
Batangas	13	47	00	121	00	00	KPC	2, 700
Amuguis	13	15	00	122	40	00	KPB	600–1, 200
San Jose, Mindoro	12	21	00	121	04	00	KIY	600–1, 200
Culion	11	53	30	120	01	00	KPJ	600–1, 200
Cuyo	10	50	00	121	00	00	KIX	600–1, 200
Puerto Princesa	9	45	00	118	44	00	KIV	600–1, 200
Iloilo	10	42	00	122	34	00	KPM	600–1, 200
Cebu	10	18	00	123	53	00	KPI	600–1, 200
San Francisco Camotes	10	38	00	124	22	00	KPY	300–600
Mati	6	57	00	126	14	00	KPZ	600–952
Malita	6	24	00	125	36	00	KPW	600–1, 200
Davao	7	04	00	125	37	00	KIF	600–1, 200
Lebak	6	33	00	124	03	00	KPX	600–957–1, 200
Malabang	7	35	00	124	05	00	KIZ	600–1, 200
Malangas	7	38	00	123	02	00	KPV	600–900
Zamboanga	6	55	00	122	02	00	KIW	1, 250
Isabela de Basilan	6	42	00	121	58	00	KPN	200
Jolo	6	03	00	121	00	00	KIL	600
Siasi	5	33	00	120	49	00	KED	600
Bongao	5	02	00	119	46	00	KEO	600–952
Cagayan, Sulu	6	59	00	118	31	00	KEV	750
Balabac	7	59	00	117	04	00	KEW	600–1, 200

Add the following paragraphs:

Radiocompass bearings.—The Naval Communication Service will furnish radio bearings to mariners of all vessels equipped with radiotelegraph transmitters. While the use of these bearings should not lead a mariner to neglect other precautions, such as the use of the lead, etc., during a fog, these bearings will greatly reduce the dangers to navigation for mariners who are compelled for any reason to proceed during foggy or misty weather.

These radiocompass stations are provided, primarily, to assist the mariner in closing the land during fog or poor visibility, but they may also be used to obtain the position of vessels at sea in radiocompass range, about 150 miles, when for any reason positions can not be obtained by other means. The maximum distance for which bearings from these stations are accurate is 150 miles. But accurate positions can not be plotted when more than 50 miles from the shore on Mercator charts, for the Mercator projection introduces a distortion of the true bearing.

Radiocompass stations are divided into two classes: (*a*) Single stations, operating independently and furnishing a single bearing. These stations are located with the view of giving service to ships at a distance of not over 150 miles from the station. (*b*) Harbor entrance groups. All stations in harbor entrance groups are connected to and controlled by the master station. All stations of the group take bearings simultaneously, and these bearings are transmitted to the ship requesting them by the control station. The purpose of these stations is to lead mariners to the light vessels off harbor entrances.

Where only one radiocompass station is available, the mariner may fix his position by two or more bearings from the station with the distance run between, or may use the bearings as a line of position or as danger bearing. Or the bearing may be crossed with a line of position obtained from an observation of an astronomical body to establish a fix.

Wave lengths.—All independent and group radiocompass stations keep watch on *800 meters.* Only this wave should be used to call and work with these stations.

During the first 10 minutes of each hour during clear weather radiocompass stations will ordinarily not be guarding the 800-meter wave. Ships are requested to confine their requests for bearings during clear weather to the remaining 50 minutes of the hour so far as practicable. During the remaining 50 minutes and all times during inclement weather all radiocompass stations will be continuously guarding the 800-meter wave.

Calling a radiocompass station.—To obtain a bearing from independent radiocompass stations, call the station from which the bearing is desired in the usual manner and request bearings by means of the conventional signal given hereafter. Simultaneous bearings from two or more compass stations can be obtained by making the call include the other compass stations desired. To obtain bearings from the harbor entrance compass stations, carry out the procedure previously given. The compass control station only will answer.

Conventional signals.—The following abbreviated signals will be used:

Signal	Meaning
QTE?	What is my true bearing?
QTE	Your true bearing is .... degrees from .... radio compass station.

The following radio compass stations will be of use for vessels approaching the west coast of the United States:

Stations	Call letters	Position	Arc of calibration
			Degrees
Pachena Point, Vancouver	VAD	Lat. 48° 45′ N., lon. 125° 06′ W	
Cattle Point, Wash	NFN	Lat. 48° 27′ 04″ N., lon. 122° 57′ 45″ W	120–280.
Smith Island, Wash	NFH	Lat. 48° 19′ 04″ N., lon. 122° 50′ 39″ W	0–360.
New Dungeness, Wash	NFT	Lat. 48° 10′ 36″ N., lon. 123° 07′ 51″ W	240–110.
Tatoosh, Wash[1]	NPD	Lat. 48° 23′ 41″ N., lon. 124° 44′ 13″ W	180–90.
Destruction Island, Wash	NOJ	Lat. 47° 40′ 29″ N., lon. 124° 29′ 02″ W	
Klipsan Beach, Wash	NZS	Lat. 46° 27′ 53″ N., lon. 124° 03′ 16″ W	195–340.
Fort Stevens, Oreg	NPE	Lat. 46° 11′ 32″ N., lon. 123° 59′ 15″ W	175–335.
Empire, Oreg	NPF	Lat. 43° 23′ 03″ N., lon. 124° 18′ 58″ W	230–10.
Eureka, Calif	NPW	Lat. 40° 41′ 49″ N., lon. 124° 16′ 33″ W	204–25.
Point Reyes, Calif	NLG	Lat. 38° 02′ 13″ N., lon. 122° 59′ 36″ W	115–5.
Point Montara, Calif	NLH	Lat. 37° 32′ 02″ N., lon. 122° 31′ 07″ W	171–360.
Farrallon Island, Calif	NPI	Lat. 37° 41′ 58″ N., lon. 122° 59′ 56″ W	0–360.
Point Arguello, Calif[3]	NPK	Lat. 34° 34′ 38″ N., lon. 120° 38′ 32″ W	135–360.
Point Hueneme, Calif	NMD	Lat. 34° 08′ 43″ N., lon. 119° 12′ 30″ W	135–305.
Point Fermin, Calif	NPX	Lat. 33° 42′ 19″ N., lon. 118° 17′ 37″ W	90–295.
Point Loma, Calif[2]	NPL	Lat. 32° 42′ 21″ N., lon. 117° 15′ 17″ W	185–250.
Imperial Beach, Calif	NPL	Lat. 32° 35′ 14″ N., lon. 117° 07′ 54″ W	180–340.

[1] Bearings furnished in the sector 232 to 264° should be used with caution until reported unreliability has been investigated.

[2] Out of commission at present. Notice will be given when operation is resumed.

[3] The calibrated area between 135 and 160° is overland, and bearings in this sector should, therefore, be used with caution until several months of checking have shown what accuracy can be expected there.

NOTE.—The arc of calibration is a sector of the circle of which the compass coil at the radio station is th center; the bearings are from the station, clockwise. Compass bearings are reliable only when they fall within the calibrated arcs.

PROCEDURE IN DETAIL.

(*a*) A ship calling the radio compass station or compass control station should make the abbreviation "QTE?" ("What is my bearing?"). This request will be answered by the radio compass station or control station, and when ready to observe the radio bearing it will send the signal "K." indicating the ship to commence "testing"; that is, repeating its distinguishing signal for a period of 50 seconds. The signal should be made slowly with the dashes considerably prolonged.

(*b*) The testing should be made on 800 meters, upon the completion of which the ship should await reply from the radio compass station.

(*c*) The radio compass station or control station will then reply repeating the abbreviation "QTE" ("Your bearing from ——— was ——— degrees"), followed by the bearing in degrees given by a group of three figures 000 to 360, indicating the true bearing in degrees of the ship station from the radio compass station, and then the time group giving the time of observations in local standard time. In the case of more than one radio compass connected by land line only, the station originally called will answer. This station will combine all the bearings taken by itself and associated stations into one message, which gives each bearing observed immediately after the name of the station making the observation. *All compass stations transmit on 800 meters.*

Danger from reciprocal bearings.—Attention is invited to the fact that when a single bearing is furnished there is a possibility of an error of approximately 180°, as the operator at the compass station can not always determine on which side of the station the vessel lies. Certain radio compass stations, particularly those on islands or extended capes, are equipped to furnish two corrected true bearings for any observations. Such bearings when furnished vessels may differ by approximately 180°, and whichever bearing is suitable should be used.

Caution.—Mariners receiving bearings which are evidently the approximate reciprocal of the correct bearing should never attempt to correct these bearings by applying a correction of 180°, as such correction would not include the correction necessary on account of deviation at the compass station. An error of as large as 30° may be introduced by mariners applying an arbitrary correction of 180° to such bearings. Vessels receiving bearings manifestly requiring an approximate 180° correction should request the other bearing from the radio compass station if not previously furnished.

Bearings, except in the case of approximate reciprocal bearings, should be accurate within 2° of arc provided the transmitting equipment on board vessels is tuned sharply to 800 meters. Operators should use sufficiently wide coupling to obtain low decrement. If radio transmitters are not tuned sharply, it is difficult to obtain bearings that are sufficiently accurate for navigational purposes. When bearings from three or more compass stations are not over 2° of arc in error, but do not meet at a fixed point, the geometric center of the triangle formed by the bearings can generally be taken as the approximate position of the vessel.

Mariners until thoroughly familiar with the system are advised to use radio compass stations frequently, especially in clear weather, when positions of vessels can be accurately fixed in order to accustom operators to the procedure and to acquaint themselves with the degree of accuracy and dependability of bearings furnished by the radio compass stations.

Reports.—In order that the operation of shore radio compass stations may be checked, mariners obtaining bearings are requested to forward a brief report to the Director Naval Communications, Navy Department, Washington, D. C., containing the following particulars: (1) Name of ship; (2) name of radio compass station; (3) date and local standard time at which radio bearing was taken; (4) bearings given by radio station; (5) estimated position of ship at above time and dates by methods other than radio; (6) the probable degree of accuracy of the estimated position; (7) weather conditions at above time; (8) remarks, if any; (9) signature of master or responsible navigating officer.

There is no charge for bearings furnished by the United States naval radio compass station.

Radio fog signals.—The following radio fog signals are operated on the Pacific coast by the United States Lighthouse Service: San Francisco Light Vessel, Calif., series of double dashes for 30 seconds, silent 30 seconds; Blunts Reef Light Vessel, single dashes for 30 seconds, silent 35 seconds; Columbia River Light Vessel, series of 3 dashes for 20 seconds, silent for 20 seconds; Swiftsure Bank Light Vessel, series of 2 dashes for 35 seconds, silent for 25 seconds.

These radio fog signals are intended for the use of vessels equipped with radio compass. By reason of this radio compass (also termed radio direction finder) the bearing of the radio fog signal station may be determined with an accuracy of approximately 2° and at distances considerably in excess of the range of visibility of the most powerful coast lights. The apparatus is simple and may be operated by the navigator without the assistance of a radio operator or without knowledge of the telegraph code. The radio direction-finding apparatus consists of a radio receiving set, similar in operation to those used for radio telegraph or telephone reception, and a rotatable coil of wire in place of the usual antenna. By rotating the coil the intensity of the signal received from the transmitting station is caused to vary, and by noting the position of the coil when the signal is heard at its minimum intensity the bearing of the transmitting station is readily obtained.

The signals from the light vessels have definite characteristics for identifying the stations, as have the flashing lights and sound fog signals, and bearing may be obtained with even greater facility than sight bearings on visible objects. The radio fog signals are transmitted on a wave length of 1,000 meters, which is exclusively reserved for this purpose to avoid interference. The stations transmit continuously during thick weather and also for one-half hour twice each day, beginning at 9 a. m. and 3 p. m., regardless of weather conditions.

Radio fog signals on the San Francisco Light Vessel and on the Blunts Reef Light Vessel sound the station characteristic, on 1,000-meter wave lengths, when there is a fog or thick haze within a distance of approximately 10 miles from the light vessel. The signal may be heard by vessels for a distance of 25 miles or more from the light vessel. Radio fog signals on the San Francisco and Blunts Reef Light Vessels will be sounded on 1,000-meter wave lengths upon request of a vessel desiring to test or calibrate its radiocompass or to check its position.

At about 8 a. m., 12 noon, and 8 p. m. daily, excepting during foggy weather, each light vessel will broadcast, on 600-meter wave lengths, weather reports pertaining to existing weather conditions in the immediate vicinity of the light vessel and will furnish such weather reports at other times to vessels requesting them. These reports cover only actual weather conditions and forecasts can not be furnished.

Masters of vessels are advised that there is only one radio operator on light vessel and that he is on watch and listens in during the first 15 minutes of each hour from 8 a. m. until 8.15 p. m. daily when there is no fog, and therefore requests, on 600-meter wave lengths, for the signal to be sounded, should be made at such times.

The radio fog signal on Blunts Reef Light Vessel will be operated during clear weather for the first 15 minutes of each even hour from 10 p. m. to 6 a. m. The radio operator on this vessel maintains watch on 600-meter wave length during the first 15 minutes of each hour from 8 a. m. to 8.15 p. m. daily, except during foggy weather, and will transmit the vessel's radio fog signal for a reasonable length of time upon request from any vessel desiring to obtain bearings by radiocompass.

Masters of vessels making use of the radio fog signals transmitted during clear weather are requested to advise the Superintendent of Lighthouses, San Francisco, Calif., by letter if the increased service is of value to them and if they desire to have such service continued or extended to cover more frequent periods in the future.

A general description of this method of navigation and the instruments required may be obtained from the Commissioner of Lighthouses, Washington, D. C., upon request. The Bureau of Standards Scientific Paper No. 428, the Radio Direction Finder and Its Application to Navigation, may be obtained from the Superintendent of Documents, Washington, D. C., for 15 cents.

PAGE 30.

The elevation of *Piedra Blanca* is 10 feet.

PAGE 53.

Araceli Reef is marked by a red nun buoy.

PAGE 55.

Dumaran.—The two black and one red buoys formerly marking the channel have been discontinued.

PAGE 61.

The buoy at the entrance to Balingasag Bay has been discontinued.

Page 68.

San Antonio Bay.—Recent surveys show the existence of many dangers along the coast, both inshore and offshore. Mariners navigating this section should use only the latest editions of the charts and be guided by them.

Page 73.

Balabac has been discontinued as a port of entry.

Page 77.

The automatic acetylene light on *Comiran Island* shows one white flash every second.

Page 82.

King Roberts Reef.—It is believed that this reef does not exist and it has been expunged from the chart.

Page 89.

A shoal with a least depth of 1 fathom of water was reported to exist 3 miles westward of *Baja Point.*

Page 106.

Malampaya Sound.—A pinnacle rock with a least known depth of 3 fathoms has been found in Malampaya Sound, about 1,400 yards 53° true from Bullock Head.

Page 120.

Tubbatha reefs are two dangerous reefs, separated by a deep channel about 5 miles wide. The northeastern reef is oblong in shape and incloses a body of water 2 miles wide and 5 miles long. In this lagoon there are depths of 7 to 10 fathoms, with mud bottom, but there are no passages through the barrier reef. Small launches may cross the reef at high tide. Deep water extends close up to the reefs, and there are no anchorages.

As the result of recent extensive surveys by the Coast and Geodetic Survey the following dangers have been proven not to exist: *Rubi Reef*, *Nicholson Shoal*, and *Rosalia Reef*. They have accordingly been expunged from the chart. The correct position of *Jessie Beasley Reef* is latitude 9° 02′ 11″, longitude 119° 48′ 40″.

Page 123.

In 1920 there were plenty of cattle on *Cagayan Sulu Island*, and they could be purchased at market prices.

Page 128.

Agusan River, directions.—The best water over the bar is reported to be northward of the range; about 2 fathoms may be carried across the bar with Magallanes Monument in line with the rear range mark.

Page 139.

Murcielagos Bay.—The channel to the anchorage is marked by two red and two black buoys.

PAGE 142.

Coronado Point.—A shoal with a least known depth of 1¾ fathoms lies 2 miles southwest of Coronado Point and 1¾ miles offshore. There are several coral heads on the shoal and a bank with 6 fathoms of water over it lies ½ mile farther offshore.

PAGE 143.

The chart reference for Port Santa Maria, Panabutan Bay, and Sibuco Bay should be 4651.

Dulunguin Point.—A shoal, small in area, with a least depth of 16 feet lies $\frac{8}{10}$ mile southward of Dulunguin Point.

Panabutan Bay.—Line 3; strike out sentence, the latest chart, No. 4651, confirms the report.

PAGE 144.

Caldera Bay.—Strike out last sentence and substitute the following: A limited supply of coal is kept here. Add new sentence: Coconut oil tanks are visible from the eastward.

PAGE 145.

The wharf at *Zamboanga* now has a depth of 22 feet along its front with 15 to 17 feet along the side. The arrow of the tidal current indicator on the wharf at Zamboanga points with the current. The current sometimes forms an inshore eddy and it is only when the arrow is strictly horizontal that it indicates the direction of the current well off the wharf.

PAGE 146.

Little Santa Cruz Island.—Second paragraph, third line, for "framed" read "steel."

PAGE 167.

A small bowlder-strewn reef surmounted by a rock awash at half tide lies about 300 yards west of Paya Island.

Piratas Rocks are reported to be covered on very high tides.

PAGES 177–178.

The two red and black horizontally striped buoys marking the shoal southward of Malabang and the Pinatayan Shoal have been discontinued.

PAGE 181.

Cotabato River entrance.—The light flashes white every 2 seconds.

PAGE 184.

The steel frame tower for the antennæ of the constabulary radio station is located 2,280 yards 173° (true) from the center of Lebak Island.

PAGE 185.

The town of *Balonga* is locally known as *Milbuk.* The harbor to the eastward of Pola Point is best approached from the southeast, passing either inside or outside of the 1¾-fathom shoal. The area southward of Pola Point appears foul and bottom is visible.

PAGE 192.

The fixed red light on the beach at Bolton has been discontinued.

PAGE 197.

Davao.—The fixed red light is now shown from a white steel structure on the beach about 400 yards southward of the wharf.

PAGE 208.

Cape San Agustin.—An occulting white light, thus—light, 12 seconds, eclipse 4 seconds every 16 seconds—visible 14 miles, is exhibited 132 feet above high water from a white steel frame structure erected on a bluff near the southern extremity of Cape San Agustin. Vessels rounding the cape should keep at least 1½ miles off the light to clear the reefs.

Malamaui Road.—A coral shoal with 13 feet over it at mean lower low water has been found in Malamaui Road, south of the western entrance to Port Isabela, 1¼ miles 238° (true) from Moro Island, right tangent.

PAGE 262.

Port Holland.—Surveys to the westward of Maluso Bay, Basilan Island disclose the existence of a 3-fathom spot in latitude 6° 33.5′ N., longitude 121° 45.2′ E. It is covered with coral heads and should be avoided. A coral patch in latitude 6° 32.7′ N., longitude 121° 45.4′ E. is covered with 1½ fathoms of water. These are dangers to be avoided in passing from the vicinity of Mataja Island to Port Holland. Certain changes of names of islands westward of Maluso Bay will be made in future editions of charts to conform to local usage.

The Basilan Lumber Co. has extended the wharf and made extensive improvements at the plant in Port Holland. The wharf has a face of about 450 feet with depth of 23 to 16 feet alongside, and they maintain a fixed red electric light at its western end.

PAGE 263.

Apparently shoal water is reported to exist 17 miles westward of *Kaludlud Island.* This may be an extension or an off-lying shoal of *Favorite Bank.*

PAGE 264.

Pilas Island.—For 919 feet substitute 560 feet.

PAGE 267.

Jolo Island, line 4, change to "rises 2,665 feet"; and, last line of same paragraph, "the only good watering place is at the town of Jolo; at other places it must either be had from the river at low tide or from wells."

PAGE 268.

Insert before "Dalrymple Harbor," Bulicutin Anchorage, and Patotol Bay afford good anchorage for small vessels not exceeding about 15 feet draft, being the best protected anchorages in the island of Jolo. Entrance to Bulicutin Anchorage in the daytime is quite feasible, as the water is clear and the edge of the reef is visible. There are no aids to navigation, and to attempt to enter at night would not be advisable. The channel from Bulicutin Anchorage into Patotol Bay is very narrow, crooked, and the water in it is discolored, so that passage through it by vessels of any size is practically impossible until some aids have been placed.

Dalrymple Harbor is the only well-protected anchorage for large vessels in the island of Jolo.

The elevation of *Tulayan Island* is 527 feet.

PAGE 269.

The P. D. rock shown on some charts 3 miles northeast of Guijangan Island does not exist.

PAGE 270.

The wharf at *Jolo* has been rebuilt of concrete. Vessels approaching this wharf must be careful to avoid the reefs on the northeast side.

Tulian Island is 113 feet high, covered with brush and small trees.

PAGE 271.

A shoal with a least depth of 4 fathoms lies ½ mile northwest of the northernmost point of Bubuan Island.

The 3-fathom shoal charted about 5 miles westward of *Cabucan Island* does not exist.

Pantocunan Island. Strike out the last sentence.

PAGE 286.

Port Bongao.—A standard concrete beacon with a fixed red light marks the extremity of the reef which extends out into the channel.

PAGE 291.

Tubigan Island.—A 4-fathom spot is reported to exist in latitude 6° 31′ N. and longitude 120° 50′ E.

PAGE 292.

A shoal with a least depth of 1¼ fathoms is reported to lie in the channel between Basbas Island and Cunilan Islands, 2 miles northeastward of Basbas Island.

Page 294.

Pearl Bank.—A rock is reported to lie 7.7 miles 27° from Zau Island light. It is about 6 feet above water, the upper part white. Although it possesses a number of sharp summits, approached from the NW. or SE., it has the appearance of a solitary rock. From a distance it is reported to have the appearance of a number of small fishing boats with spread sails. Later reports question the existence of this rock.

Page 303.

Unsang Point is marked by a group flashing light visible 14 miles.

Page 306.

Atjeh Rock is marked by a lighted buoy showing a white flash every 3 seconds.

Page 307.

Sandakan.—A depth of 3¼ fathoms exists alongside the outer end of the pier extending southeastward from the customs and harbor office at Sandakan. A depth of 2½ fathoms exists alongside the center of the outer end of the pier about 150 yards southwestward of the first-mentioned pier.

Page 309.

Taganak Island is marked by an unwatched flashing white light erected on its summit.

Page 310.

A shoal with a depth less than 2 fathoms has been reported close eastward of the rock marked by a beacon about 2 miles southward of *Lankayan Island*.

Page 315.

Fairway Shoal beacon has disappeared.

Page 326.

A tripod beacon with globe top mark painted black and white marks the northeastern side of Outer Shoal.

Page 331.

Sandilands Rock light shows a white flash every 3 seconds.

Page 339.

Jesselton. The light at the end of the main part of the pier is now fixed white.

PAGE 340.

Substitute the following:

COAST PILOTS AND FIELD STATIONS OF THE COAST AND GEODETIC SURVEY

COAST PILOTS

	Price
U. S. Coast Pilot, Atlantic Coast, Section A, from St. Croix River to Cape Cod	$0.75
U. S. Coast Pilot, Atlantic Coast, Section B, from Cape Cod to New York, including Long Island Sound	.75
U. S. Coast Pilot, Atlantic Coast, Section C, Sandy Hook to Cape Henry, including Delaware and Chesapeake Bays	.75
U. S. Coast Pilot, Atlantic Coast, Section D, Cape Henry to Key West	.75
U. S. Coast Pilot, Atlantic Coast, Section E, Gulf of Mexico, from Key West to the Rio Grande	.75
U. S. Coast Pilot, West Indies, Porto Rico, and Virgin Islands	.75
Inside Route Pilot, coast of New Jersey	.30
Inside Route Pilot, New York to Key West	.30
Inside Route Pilot, Key West to New Orleans	.30
U. S. Coast Pilot, Pacific Coast, California, Oregon, and Washington	.75
U. S. Coast Pilot, Pacific Coast, Alaska, Part I, from Dixon Entrance to Yakutat Bay	.75
U. S. Coast Pilot, Pacific Coast, Alaska, Part II, Yakutat Bay to Arctic Ocean	.75
U. S. Coast Pilot, Hawaiian Islands	.50
U. S. Coast Pilot, Philippine Islands, Part I, Luzon, Mindoro, and Visayas	.75
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FIELD STATIONS

Boston, Mass., Appraisers Building, 308 Atlantic Avenue.
New York, N. Y., 311-312 Maritime Exchange Building.
New Orleans, La., Room 314, Customhouse.
San Francisco, Calif., Room 306, Customhouse.
Seattle, Wash., Room 202, Burke Building.
Manila, P. I., Intendencia Building.

At these stations complete files of the United States Coast and Geodetic Survey charts, Coast Pilots, Current Tables, Tide Tables, and other publications relating to navigation may be consulted and information affecting navigation obtained without charge. Light Lists, Buoy Lists, and Notices to Mariners are kept for sale or for free distribution to mariners.

Serial No. 344

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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
E. LESTER JONES, DIRECTOR

SUPPLEMENT
TO
UNITED STATES COAST PILOT
PHILIPPINE ISLANDS

PART I

LUZON, MINDORO, AND VISAYAS

JANUARY 1, 1926

NOTE.—This supplement gives the more important corrections and additions to the text of the Coast Pilot volume since its publication. All changes, given in previous supplements and not repeated herein, are no longer in effect. The supplement is so printed that it may be cut up and the slips inserted on the pages affected. All new information should be inserted in such a manner that it can be removed if changed or canceled by a subsequent supplement.

WASHINGTON
GOVERNMENT PRINTING OFFICE
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IMPORTANT NOTICE.—**Supplements to the United States Coast Pilots are issued at least once a year and give all available information for bringing the Coast Pilots up to date. The Coast and Geodetic Survey must depend in a great measure upon outside sources of information pending a complete revision of a volume. Mariners and others will therefore realize the importance and great desirability of cooperation in this work, and are urgently requested to forward to the Director, United States Coast and Geodetic Survey, Washington, D. C., directly or through one of the field stations of the survey, any information affecting the Coast Pilots or charts that may come to their notice, as well as any suggestions that they may have for increasing the value of these publications.**

PAGE 28.

Time signals.—Signals are not sent on Sundays and holidays.

PAGE 29.

Time signals.—Line 1, the radio transmission is on wave lengths of 2,700 meters, spark, and 5,260 meters, continuous wave. Weather bulletins follow the time signals.

Radio service.—Third sentence, substitute the following: "Information concerning the United States commercial radio stations of the United States should be addressed to the Bureau of Navigation, Department of Commerce, Washington, D. C. For list of the radio stations of the United States, including shore stations, merchant vessels, and Government vessels; Radio Communication Laws and Regulations of the United States; and Amateur Radio Stations of the United States, address the Superintendent of Documents, Government Printing Office, Washington, D. C.; price 15 cents each; excepting Amateur Radio Stations, price 25 cents each." Changes or additions to the stations and to the laws and regulations are published in bulletins issued monthly; price 5 cents per copy or 25 cents per year.

The International List of Radio Stations of the World (edition in English) can be procured from the International Bureau of the Telegraphic Union (Radiotelegraphic Service), Berne, Switzerland. In addition to the information contained in the list of the United States stations published by the Bureau of Navigation, the international list shows geographical locations, normal ranges, in nautical miles, radio systems, and rates. Supplements to the international list will be issued monthly and will contain new stations and tables of alterations. Inquiries as to the subscription prices of these lists should be made direct to the Berne bureau at the address given above. Remittances to Berne should be made by international postal money orders.

MEW

The insular government radio stations are as follows:

Coastal stations (insular government radio stations) listen in on a 600-meter wave length for ship messages about 10 minutes each hour while open for business

Station	Call letters	Latitude N.		Longitude E.		Wave length
		°	′	°	′	*Meters*
Aparri	KZAD	18	21	121	38	550, 600, 1,100, variable
Balabac	KEW	7	59	117	04	600, 1,200
Basco	KZAB	20	28	121	59	600, 952, 1,200, 1,500, 1,800, 2,400
Batangas	KPC	13	47	121	00	400, 600, 800, 950, 1,200, 1,500, 1,900
Bongao	KEO	5	02	119	46	600
Cagayan de Sulu	KEV	6	59	118	31	750
Calapan	KZAC	13	24	121	11	400, 600, 700, 900
Cebu	KPI	10	18	123	53	600, 750, 950, 1,200, 1,250, 1,600, 2,400
Culion	KPJ	11	53	120	01	600, 900
Cuyo	KIX	10	50	121	00	600, 850
Davao	KIF	7	04	125	37	600, 1,100
Iloilo	KPM	10	42	122	34	600, 950, 1,200, 1,600, 1,950, 2,400
Isabella de Basilan	KPN	6	42	121	58	200
Jolo	KIL	6	03	121	00	600, 1,200, 1,905
Legaspi	KZAJ	13	09	123	45	550, 600, 950, variable
Malabang	KIZ	7	35	124	05	600, 750, 800, 850
Malangas	KPV	7	38	123	02	600
Malita	KPW	6	24	125	36	450, 600, 700
Mati	KPZ	6	57	126	14	600, 952
Port Lebak	KPX	6	33	124	03	600, 1,500, 2,000
Puerto Princesa	KIV	9	45	118	44	600, 900
San Francisco Camotes	KPY	10	38	124	22	300, 378, 476, 600, 756, 952
San Jose	KIY	12	21	121	04	600, 1,400
San Vicente	KZAG	-----	-----	-----	-----	550–1,100, 750
Siasi	KED	5	33	120	49	450, 600, 650
Surigao	KZAM	9	48	125	29	550–1,100, 950
Virac	KZAH	13	47	124	14	600, 750, 950
Zamboanga	KIW	6	55	122	02	950, 1,250, 1,500, 1,850

Add the following paragraphs:

Radiocompass bearings.—Naval radiocompass stations will furnish radio bearings to mariners of all vessels equipped with radiotelegraph transmitters. While the use of these bearings should not lead a mariner to neglect other precautions, such as the use of the lead, etc., during a fog, these bearings will greatly reduce the dangers to navigation for mariners who are compelled for any reason to proceed during foggy or misty weather.

These radiocompass stations are provided, primarily, to assist the mariner in closing the land during fog or poor visibility, but they may also be used to obtain the positions of vessels at sea in radiocompass range—about 150 miles—when for any reason positions can not be obtained by other means. The maximum distance for which bearings from these stations are accurate is 150 miles, but accurate positions can not be plotted when more than 50 miles from the shore on Mercator charts, for the Mercator projection introduces a distortion of the true bearing.

Radiocompass stations are divided into two classes: (*a*) Single stations, operating independently and furnishing a single bearing. (*b*) Harbor entrance groups. All stations in harbor entrance groups are connected to and controlled by the master station. All stations of the group take bearings simultaneously, and these bearings are transmitted to the ship requesting them by the control station.

Where only one radiocompass station is available, the mariner may fix his position by two or more bearings from the station with the distance run between, or may use the bearings as a line of position, or as a danger bearing, or the bearing may be crossed with a line of position obtained from an observation of an astronomical body to establish a fix.

Accuracy of bearings.—The accuracy with which bearings can be taken depends on various conditions and, while bearings taken by a station can generally be considered accurate to within 2°, the Government can not accept any responsibility for the consequences of a bearing being inaccurate.

When three stations, so situated as to give intersecting bearings, can be used and the three simultaneous bearings cross with a small "triangle of error," considerable reliance can be placed in the position obtained.

In the case of bearings which cut the coast line at an oblique angle, errors of from 4 to 5° have been reported. Bearings obtained between about one-half hour before sunset and one-half hour after sunrise are generally unreliable. It is probable that the accuracy of a bearing is also affected if the ship's transmitting instrument is not adjusted to the correct wave length. Bearings signaled as "approximate" or "second class" should be regarded with suspicion as being subject to considerable error.

Wave lengths.—All independent and group radiocompass stations keep watch on 800 meters. Only this wave should be used to call and work with these stations.

Hours of service.—During the first 10 minutes of each hour during clear weather radiocompass stations will ordinarily not be guarding the 800-meter wave. Ships are requested to confine their requests for bearings during clear weather to the remaining 50 minutes of the hour, if practicable. If a station chances to hear a request for a bearing during the first 10 minutes of the hour, the requested bearing will be given. During the remaining 50 minutes of the hour and at all times during inclement weather all radiocompass stations will be continuously guarding the 800-meter wave.

Calling a radiocompass station.—To obtain a bearing from independent radiocompass stations, call the station from which the bearing is desired in the usual manner and request bearings by means of the conventional signal given hereafter. Simultaneous bearings from two or more compass stations can be obtained by making the call include the other compass stations desired. To obtain bearings from the harbor entrance compass stations carry out the procedure previously given. The compass control station only will answer.

Conventional signals.—The following abbreviated signals will be used:

Signal	Meaning
QTE?	What is my true bearing?
QTE	Your true bearing from ------ radiocompass station was ------ degrees.

The following radiocompass stations will be of use for vessels approaching the west coast of the United States. In plotting bearings furnished by these stations the *position of receiver* must be used. Vessels equipped with a radiocompass may also use these stations as radio beacons. For this purpose a United States naval station will transmit, upon request, its call letter for 45 seconds on 800-meter wave. When the bearing is taken on the vessel, the *position of transmitter* must be used for plotting.

Station	Call letters	Position of receiver						Position of transmitter						Arc of calibration
		Latitude north			Longitude west			Latitude north			Longitude west			
		°	′	″	°	′	″	°	′	″	°	′	″	*Degrees*
Pachena Point, Vancouver	VAD	48	44	--	125	06	--							
Cattle Point, Wash	NFN	48	27	05	122	57	45	48	27	17	122	57	41	120-280
Smith Island, Wash	NFH	48	19	04	122	50	39	48	19	12	122	50	35	0-360
New Dungeness, Wash	NFT	48	10	32	123	07	56	48	10	26	123	08	06	240-115
Tatoosh Island, Wash.[1]	NPD	48	23	41	124	44	13	48	23	28	124	44	04	180-90
Destruction Island, Wash	NOJ	47	40	29	124	29	02	47	40	30	124	29	00	
Klipsan Beach, Wash	NZS	46	27	53	124	03	16	46	27	54	124	03	11	195-340
Fort Stevens, Oreg	NPE	46	11	32	123	59	15	46	09	12	123	49	36	175-335
Empire, Oreg	NPF	43	23	03	124	18	58	43	20	38	124	13	36	230-10
St. George Point, Calif	NYW	41	47	00	124	15	05							178-10
Eureka, Calif	NPW	40	41	49	124	16	33	40	41	45	124	16	19	204-10
Point Reyes, Calif.[2]	NLG	38	02	13	122	59	36	38	02	10	122	59	36	210-2
Point Montara, Calif.[2]	NLH	37	32	02	122	31	07	37	32	04	122	31	05	185-319
Farallon Island, Calif.[2]	NPI	37	41	59	122	59	56	37	41	52	123	00	00	0-360
Point Arguello, Calif.[3]	NPK	34	34	38	120	38	32	34	34	38	120	38	41	170-360
Point Hueneme, Calif	NMD	34	08	43	119	12	30	34	08	43	119	12	12	135-305
Point Fermin, Calif	NPX	33	42	19	118	17	37	33	42	22	118	17	36	90-290
Point Loma, Calif	NPL	32	42	21	117	15	17	32	44	15	117	03	53	85-250
Imperial Beach, Calif	NPL	32	35	14	117	07	54							182-331

[1] Bearings furnished in the sector 232° to 264° should be used with caution until reported unreliability has been investigated.

[2] The San Francisco entrance stations are under the control of the Point Montara radio station.

[3] The calibrated area between 135° and 160° is overland, and bearings in this sector should therefore be used with caution until several months of checking have shown what accuracy may be expected there.

NOTE.—The arc of calibration is a sector of the circle of which the compass coil at the radio station is the center; the bearings are from the station (clockwise). Compass bearings are reliable only when they fall within the calibrated arcs.

PROCEDURE IN DETAIL

(*a*) A ship calling the radiocompass station or compass-control station should make the abbreviation "QTE?" ("What is my true bearing?"). This request will be answered by the radiocompass station or control station, and when ready to observe the radio bearing it will send the signal "K," indicating to the ship to commence "testing," that is, repeating its distinguishing signal for a period of 50 seconds. The signal should be made slowly with the dashes considerably prolonged.

(*b*) The testing should be made on 800 meters, upon the completion of which the ship should await reply from the radiocompass station.

(*c*) The radiocompass station or control station will then reply, repeating the abbreviation "QTE" ("Your true bearing from ——— was ——— degrees"), followed by the bearing in degrees given by a group of three figures 000 to 359, indicating the true bearing in degrees of the ship station from the radiocompass station, and then the time group giving the time of observations in local standard time. In the case of more than one radiocompass connected by land line, only the station originally called will answer. This station will combine all the bearings taken by itself and associated stations into one message, which gives each bearing observed immediately after the name of the station making the observation. *All compass stations transmit on 800 meters.*

Danger from reciprocal bearings.—Attention is invited to the fact that when a single bearing is furnished there is a possibility of an error of approximately 180°, as the operator at the compass station can not always determine on which side of the station the vessel lies. Certain radiocompass stations, particularly those on islands or extended capes, are equipped to furnish two corrected true bearings for any observation. Such bearings when furnished vessels may differ by approximately 180°, and whichever bearing is suitable should be used. See table giving "arc of calibration."

Caution.—Mariners receiving bearings which are evidently the approximate reciprocal of the correct bearing should never attempt to correct these bearings by applying a correction of 180°, as such correction would not include the correction necessary on account of deviation at the compass station. An error of as large as 30° may be introduced by mariners applying an arbitrary correction of 180° to such bearings. Vessels receiving bearings manifestly requiring an approximate 180° correction should request the other bearing from the radiocompass station if not previously furnished.

Bearings, except in the case of approximate reciprocal bearings, should be accurate within 2° of arc provided the transmitting equipment on board vessels is tuned sharply to 800 meters. Operators should use sufficiently wide coupling to obtain low decrement. If radio transmitters are not tuned sharply, it is difficult to obtain bearings that are sufficiently accurate for navigational purposes. When bearings from three or more compass stations are not over 2° of arc in error, but do not meet at a fixed point, the geometric center of the triangle formed by the bearings can generally be taken as the approximate position of the vessel.

Mariners until thoroughly familiar with the system are advised to use radiocompass stations frequently, especially in clear weather, when positions of vessels can be accurately fixed in order to accustom operators to the procedure and to acquaint themselves with the degree of accuracy and dependability of bearings furnished by the radiocompass stations.

Reports.—In order that the operation of shore radiocompass stations may be checked, mariners obtaining bearings are requested to forward a brief report to the Director Naval Communications, Navy Department, Washington, D. C., containing the following particulars: (1) Name of ship. (2) Name of radiocompass station. (3) Date of local standard time at which radio bearing was taken. (4) Bearings given by radio station. (5) Estimated position of ship at above time and dates by methods other than radio. (6) The probable degree of accuracy of the estimated position. (7) Weather conditions at above time. (8) Remarks, if any. (9) Signature of master or responsible navigating officer.

There is no charge for bearings furnished by the naval radiocompass stations.

Radio fog signals.—The following radio fog signals are operated on the Pacific coast by the United States Lighthouse Service:

Point Arguello Light Station (lat. 34° 34′ 38″ N., long. 120° 38′ 59″ W.):	
Series of three dashes for	60 seconds
Silent	45 seconds
Point Sur Light Station (lat. 36° 18′ 24″ N., long. 121° 54′ 03″ W.):	
Group of dot, two dashes, and dot for	60 seconds
Silent	90 seconds
San Francisco Lightship (call letters WWBV; lat. 37° 45′ 03″ N., long. 122° 41′ 30″ W.):	
Series of two dashes for	60 seconds
Silent	60 seconds
Blunts Reef Lightship (call letters WWBU; lat. 40° 26′ 04″ N., long. 124° 30′ 14″ W.):	
Single dashes for	60 seconds
Silent	120 seconds
Cape Blanco Light Station (lat. 42° 50′ 15″ N., long. 124° 33′ 36″ W.):	
Group of one dash and one dot for	60 seconds
Silent	30 seconds
Columbia River Lightship (call letters WWBQ; lat. 46° 11′ 01″ N., long. 124° 11′ 04″ W.):	
Series of three dashes for	60 seconds
Silent	30 seconds
Swiftsure Bank Lightship (call letters WWBO; lat. 48° 31′ 44″ N., long. 125° 00′ 00″ W.):	
Series of two dashes for	60 seconds
Silent	30 seconds

These radio fog signals are intended for the use of vessels equipped with radiocompass. By reason of this radiocompass (also termed radio direction finder) the bearing of the radio fog-signal station may be determined with an accuracy of approximately 2° and at distances considerably in excess of the range of visibility of the most powerful coast lights. The apparatus is simple and may be operated by the navigator without the assistance of a radio operator or without knowledge of the telegraph code. The radio direction-finding apparatus consists of a radio receiving set, similar in operation to those used for radio telegraph or telephone reception, and a rotatable coil of wire in place of the usual antenna. By rotating the coil the intensity of the signal received from the transmitting station is caused to vary, and by noting the position of the coil when the signal is heard at its minimum intensity the bearing of the transmitting station is readily obtained.

It is important to note that the bearing of an incoming radio wave is subject to errors not unlike the deviation of a magnetic compass. Those using radio direction finding on shipboard are cautioned to bear these errors in mind and to keep radiocompasses calibrated at all times. This may be done during clear weather by comparing the bearing obtained by radiocompass with the bearing determined by other methods in general use. All radiocompasses are subject to what is called "night effect," an indeterminate error sometimes experienced near nightfall and sunrise.

The signals from the lightships have definite characteristics for identifying the stations, as have the flashing lights and sound fog signals, and bearings may be obtained with even greater facility than sight bearings on visible objects. *The radio fog signals are* *transmitted on a wave length of 1,000 meters, which is exclusively reserved for this purpose to avoid interference.*

The ships and stations transmit continuously during thick weather and from 9 to 9.30 a. m. and from 3 to 3.30 p. m. during clear weather. Blunts Reef, Columbia River, and Swiftsure Bank Lightships also transmit in clear weather for the first 15 minutes of each even hour from 10 p. m. to 6.15 a. m., all one hundred and twentieth meridian time.

The light stations do not maintain radiocommunication. On the lightships the operators maintain watch on 600 meters for the first 15 minutes of each hour from 8 a. m. to 9.15 p. m., one hundred and twentieth meridian time, except when radio fog signal is in operation. Radio requests for special transmission of radio fog signals for a reasonable time from lightships for the purpose of checking bearings or calibrating the radiocompass should be made during such watch periods, using 600-meter wave.

At about 8 a. m., 12 noon, and 8 p. m. daily each lightship will broadcast, on 600-meter wave lengths, weather reports pertaining to existing weather conditions in the immediate vicinity of the lightship and will furnish such weather reports at other times to vessels requesting them. These reports cover only actual weather conditions, and forecasts can not be furnished.

Masters of vessels making use of the radio fog signals transmitted during clear weather are requested to advise the Superintendent of Lighthouses, San Francisco, Calif., by letter if the increased service is of value to them and if they desire to have such service continued or extended to cover more frequent periods in the future.

A general description of this method of navigation and the instruments required may be obtained from the Commissioner of Lighthouses, Washington, D. C., upon request. The Bureau of Standards Scientific Paper No. 428, the Radio Direction Finder and Its Application to Navigation, may be obtained from the Superintendent of Documents, Washington, D. C., for 15 cents.

PAGE 37.

Forest Belle Rock is reported as not existing and has been expunged from the charts.

PAGE 38.

Bashi Rocks are reported as not existing and have been expunged from the charts.

A reef 6 miles long has been reported to exist in latitude 20° 25′ N., longitude 119° 23′ E. No further details were given. Later reports give the existence of this reef as doubtful.

PAGE 41.

The Babuyan Islands.—Owing to the reported uncertainty of the position of this group, including Wyllie Rocks, and the uncertainty of the currents in the vicinity, these rocks should not be approached closer than 10 to 15 miles.

PAGE 61.

Balingasag Bay.—The black can buoy, mentioned in the supplement dated January 1, 1924, as marking the north side of the entrance, has been discontinued.

Page 64.

The channel into Port Masinloc north of Salvador Island is marked by 2 red and 4 black buoys. A small wharf extends out from the point about 1 mile southward of the town of Masinloc.

Page 68.

Cubi Point.—The red buoy has been changed to a gas buoy showing one white flash every three seconds.

Page 70.

Los Cochinos.—The northern channel between the rocks is obstructed by a sunken rock a few meters east of mid-channel. The least depth on the rock is ½ fathom.

Guardia Shoal.—The gas buoy has been replaced by a black second-class can buoy.

Pages 72–73.

The naval authorities have established a torpedo range between San Nicolas Shoal and Sangley Point, described as follows: "East end located 4,500 yards 280° true from Sangley Point Light. Range extends from there 3,500 yards 241° true and consists of spar buoys at 0, 1,000, 2,000, 2,500, and 3,000 yards and a nun buoy at 3,500 yards which for S/Ms is the firing point. Range may later be extended in direction of San Nicolas Shoal. Range lies south of traffic between San Nicolas Shoal and Manila Harbor."

Page 73.

Sangley Point.—The shoal making southward of Sangley Point has been dredged to a depth of 22 feet, the inner and outer edges of the channel at this point being marked by buoys.

Manila, fourth paragraph: Anchorage outside the breakwater is restricted to the area northward of a line bearing 255° from the flashing red light on the south end of the south breakwater.

Quarantine.—The disinfecting and detention station is at Mariveles, but vessels having no infectious or contagious disease aboard await pratique off the breakwater entrance at Manila.

Page 75.

Dredging operations are under way in Canacao Bay, and no reliance should be placed on the charted positions of the buoys, as they are liable to be shifted. Mooring buoys Nos. 21, 22, 23, 24, 25, and 26 should be expunged from the chart. They no longer exist, or have been moved farther into the bay. A lighted buoy, fixed white, has been placed 200 yards 71° from the end of the dock at the Cavite Navy Yard.

Compass ranges.—Additional bearings have been determined, as follows:

	°	′
South radio to Mount Sungay	161	38
South radio tower to Mount Maquiling	142	00
South radio tower to Mount Banahao	127	07
South radio tower to Mount Susundalaga	115	15
South radio tower to Mount Sembrano	103	07
South radio to Las Pinas Church	97	21
South radio tower to Paranaque Church	83	42
Sangley light to Cavite water tank	176	00

The bearings (true) of the ranges formed by the radio towers themselves are as follows:

	°	′
Northeast tower to south tower	215	45
Northwest tower to south tower	155	45
Northwest tower to northeast tower	95	45

The towers, however, are very close together, of open steel construction, and are more or less flexible, being subject to temperature and wind movements which, with the probable error of determination, may introduce an uncertainty of as much as 1° into the observations of the bearings. Particular care must also be taken to get good contacts; as the towers are of equal size, the nearer one is liable to obscure the actual contact of the range for an appreciable interval.

PAGE 82.

Lucena.—Paragraphs 2, 3, and 4: The fixed red light has been discontinued, and the tower has been removed.

PAGE 83.

The black buoy marking the extreme southern edge of the reef making out from Pagbilao Bay, has been discontinued.

PAGE 103.

Casiguran Light (fixed red) visible 7 miles, is exhibited from a standard concrete beacon on the beach in front of Casiguran Church.

PAGE 104.

Bulan.—A fixed red light is displayed from a 28-foot concrete beacon back of the beach, height 32 feet above high water, visible 7 miles over an arc of 164° from N. 15° W. to S. 31° E.

Sorsogon.—The Commercial Pacific Cable Co. has established a triangular beacon painted white, which, with a similar mark on the cable hut ashore, indicates the line of their cable at Sorsogon. Position of beacon latitude 12° 57′ 47″ N., longitude 124° 00′ 10″ E. The cable at Bacon is not marked, but two positions on the line are given as follows: Latitude 13° 03′ 05″ N., longitude 124° 02′ 44″ E.; latitude 13° 05′ 30″ N., longitude 124° 06′ 14″ E. Vessels are warned to keep clear of the cable.

PAGE 125.

Directions for Daet River.—The channel buoys have been discontinued.

PAGE 132.

Lamit Islands, second paragraph: The anchorage southward of the western Bani Island is obstructed by a 1½-fathom shoal. Good anchorage may be found southward and southwestward of Anchor Island in 4 to 8 fathoms, sticky mud bottom.

Directions, second paragraph: The west end of the western Bani Island can be rounded at a distance of ¼ mile. The anchorage southward of the island is obstructed by a shoal and can only be used by small vessels.

Page 150.
A fixed red light is exhibited from a white concrete beacon on the beach at Sabang.

Page 153.
Rapurapu Strait.—The buoy formerly marking the south edge of Derickson Reef has been moved to the south edge of the 2½-fathom shoal southward of Derickson Reef.

Page 154.
Batan Harbor.—The spar buoy marking the 7½-foot shoal off the wharf has been discontinued.
Coal Harbor.—The channel leading to the wharf is marked by two black and one red buoy.

Page 168.
Pinamalayan.—Paragraph 2, last sentence: The fixed red light has been made an official light. It is displayed from a standard concrete pillar, painted white. Elevation 33 feet, visible 7 miles.

Page 175.
Panagatan Cays.—Both cays are wooded.

Page 179.
Mangarin Bay.—Additional information: Good water may be obtained, but only in limited amounts and inconveniently. Supplies are not obtainable. Some provisions may be secured from the sugar company's stores. There are no stevedoring facilities. Vessels must enter and clear from Manila, there being no customhouse at this port.

Page 181.
Shoals off Magarin Wharf.—The outer 1½-fathom shoal is marked by a black can buoy moored in 27 feet of water, mud bottom.

Page 210.
Iloilo, Pilotage, second paragraph: The Iloilo City Light has been permanently discontinued.

Page 211.
Siete Pecados.—Line 5: A red nun buoy marks the ¼-fathom shoal southward of the islands.

Page 214.
Iogiog Bank.—A red nun buoy marks the northern end; a black can buoy marks the eastern side opposite Pandan Point; and a gas buoy showing 1 white flash every 3 seconds marks the southern end of this bank.

Page 216.
New Washington.—The entrance to the Lagatic River is now marked by one red and one black buoy.

Page 233.
Pulupandan.—The wharf at Pulupandan, on the south side of Pandan Point, has 26 feet of water alongside at low water, mud

bottom. Ocean-going vessels call here for sugar during the milling season. The best approach is from the southward. Round the gas buoy which marks the south end of Iogiog Bank and steer a course about 21° for the head of the wharf. Anchor about 100 yards off the fish traps with the Ma-ao Dock bearing 16° true and the old dock bearing 90° true. During the northeast monsoon a vessel seldom if ever swings inshore on the turn of the tide, and loading from lighters is greatly facilitated by the smoother water obtained in anchoring close inshore. In going alongside the wharf, a south running tide should be chosen and the port anchor dropped well off the wharf. Customs inspectors and stevedores are usually brought from Iloilo and a vessel can save time by arranging to clear without returning to that port. Practically no supplies can be obtained at Pulupandan.

Page 238.

Dumaguete.—A stone jetty with dock has been constructed at the northern end of Dumaguete, near the stream northward of Stillman Institute. The jetty is approximately 1,000 feet long, extending east and northeastward. The end of the dock is 50 feet wide, with a depth of 3 fathoms alongside.

Page 239.

A black can buoy marks the edge of the shoal water off Canamay Point at the south side of South Bais Bay.

Page 240.

A red nun buoy marks the edge of the shoal water southeastward of Arboles Point.

The wharf of the Central Azucarera de Bais is on the south shore of South Bais Bay.

Page 242.

A fixed red light is displayed from a concrete beacon on the beach at Guijulngan.

Page 243.

Refugio Island.—A black can buoy marks the edge of the reef northward and a red nun buoy southward of the island.

Page 245.

Danao River.—A fixed red light is shown from a concrete beacon near the ruins of the wharf.

Page 247.

Malapascua Island.—Malapascua Light, flashing white every 3 seconds, is exhibited, 112 feet above high water, from a white steel framed tower.

Page 249.

Tuburan Bay.—A set of white triangular range marks having a black vertical stripe through the center have been erected on the beach. The marks in range bearing 142° true (141° mag.) will lead between the reefs to the anchorage.

Page 250.

Asturias.—The diamond-shaped beacons mark the channel between the reefs. Steer midway between the beacons, heading for the barrio of Langob on a 113° true (112° mag.) course.

Balamban.—A fixed red light, visible 7 miles, is exhibited from a white concrete pillar erected on the beach in front of the town.

Page 252.

Dumanjug.—A fixed red light, visible 7 miles, is exhibited from a white concrete pillar erected on the beach at Tangil.

Page 260.

Cebu Harbor.—The list of lights, etc., of the Philippine Islands is now published by the Bureau of Commerce and Industry instead of the Bureau of Customs, as formerly.

A small 3¾-fathom shoal of live coral ⅓ mile west of Opon light is marked by a black and red horizontally striped can buoy.

There are several shoal spots with a least depth of 4¼ fathoms in the northeastern channel. Use only the latest edition of chart 4447.

Bantolinao Point.—Last line, for "beacon" read "black can buoy."

Page 261.

Lauis Ledge lighthouse.—The light is visible over an arc of 239° (from 305° to 184°). The dark sector covers the reef to the northward and around to the southeastward of the lighthouse. The western limit of the shoals off the lighthouse is marked by a red nun buoy.

Directions, northern approach to Cebu.—Lines 5 and 6: For "beacon" read "black can buoy." Strike out last sentence and substitute the following: "When in mid-channel abeam of Opon Light (fixed green) select suitable courses in accordance with chart 4447."

Page 262.

Directions, southern approach to Cebu.—Paragraph 2, change first sentence to read: "Vessels from southward should bring San Nicolas Church red light in range with Osmena Fountain City Light (fixed white) and steer for it on a course about 6° true (4° mag.) passing midway, etc." Line 6, for "San Pedro Fort red light" read "San Pedro Fort green light."

Page 278.

Tagbilaran.—A 16-foot channel, 50 meters wide, and about ¾ mile long, leading to a stone dock northward of Tagbilaran is marked by seven stone beacons, with perches. The port-hand beacons are four in number, with black square day marks on the perches, and the starboard-hand beacons three in number, with red conical marks on the perches.

Page 288.

Good shelter may be found in the channel southward of Gilbert Island in 4 fathoms, smooth bottom, entering from eastward.

Page 290.

Caterman.—Vessels usually load at Cawayan. The channel into Cawayan is narrow but is marked by two beacons. The kedge anchor is used to hold the vessels into the swell.

Page 291.

Laoang.—Two additional wharves have been built at the town of Laoang.

Page 300.

The channel at *Oras River entrance* is shifting. The island formerly in mid-channel has disappeared, and the point on the west side has been extended considerably. The small island farther up the river has been joined to the south shore, thus forcing main channel to the northward. There is a small wharf and camarin near the mouth of the river.

Page 314.

Surigao Strait.—The master of the steamer *Narbo* reports that his compasses were affected by "local attraction" while passing through Surigao Strait and along the south coast of Negros en route to Iloilo. The observed azimuth showed that the standard compass varied as much as 7°.

Page 325.

Biliran Strait.—A concrete beacon with flashing white light has been placed on the edge of the reef on the southern side of the strait near its narrowest part.

Page 338.

Tacloban.—A stone dock, approximately 300 feet long, with a depth of 2½ fathoms alongside, has been constructed at the southwestern end of the water front at Tacloban.

Page 339.

Substitute the following:

COAST PILOTS AND FIELD STATIONS OF THE COAST AND GEODETIC SURVEY

COAST PILOTS

	Price
U. S. Coast Pilot, Atlantic Coast, Section A, from St. Croix River to Cape Cod	$0.75
U. S. Coast Pilot, Atlantic Coast, Section B, from Cape Cod to Sandy Hook, including Long Island Sound	.75
U. S. Coast Pilot, Atlantic Coast, Section C, Sandy Hook to Cape Henry, including Delaware and Chesapeake Bays	.75
U. S. Coast Pilot, Atlantic Coast, Section D, Cape Henry to Key West	.75
U. S. Coast Pilot, Gulf Coast, Key West to the Rio Grande	.75
U. S. Coast Pilot, West Indies, Porto Rico, and Virgin Islands	.75
Inside Route Pilot, coast of New Jersey	.30
Inside Route Pilot, New York to Key West	.30
Inside Route Pilot, Key West to the Rio Grande	.50
U. S. Coast Pilot, Pacific Coast, California, Oregon, and Washington	.75
U. S. Coast Pilot, Pacific Coast, Alaska, Part I, from Dixon Entrance to Yakutat Bay	.75
U. S. Coast Pilot, Pacific Coast, Alaska, Part II, Yakutat Bay to Arctic Ocean	.75
U. S. Coast Pilot, Hawaiian Islands	.50
U. S. Coast Pilot, Philippine Islands, Part I, Luzon, Mindoro, and Visayas	.75
U. S. Coast Pilot, Philippine Islands, Part II, Palawan, Mindanao, and Sulu Archipelago	.75

FIELD STATIONS

Boston, Mass., Appraisers Building, 408 Atlantic Avenue.
New York, N. Y., Room 312, No. 78 Broad Street.
New Orleans, La., Room 314, Customhouse.
San Francisco, Calif., Room 305–6, Customhouse.
Seattle, Wash., Room 202, Burke Building.
Manila, P. I., Intendencia Building.

At these stations complete files of the United States Coast and Geodetic Survey charts, Coast Pilots, Current Tables, Tide Tables, and other publications relating to navigation may be consulted and information affecting navigation obtained without charge. Light Lists, Buoy Lists, and Notices to Mariners are kept for sale or for free distribution to mariners.

PAGE 345.

Fifth signal.—Lines 2 and 3: For "south over west to north," read "north over west to south."

Eighth signal.—Line 1: Strike out words "Strong winds."

PAGE 348.

Special regulations for vessels maneuvering in the Pasig River.—Vessels maneuvering in the Pasig River, and not under way, shall carry at night, besides the anchor lights, a red light, which shall be placed 4 feet below the white anchor light in the same vertical line, and also the side lights. As soon as the vessel is under way these lights shall be lowered and the regular masthead light shall be lighted. At daytime the International Code letter "M" shall be displayed until the vessels have cleared the mouth of the river. (C. A. O. 68.)

○

Serial No. 345

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
E. LESTER JONES, DIRECTOR

VK
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Suppl.
1926

SUPPLEMENT

TO

UNITED STATES COAST PILOT

PHILIPPINE ISLANDS

PART II

PALAWAN, MINDANAO, AND SULU ARCHIPELAGO

JANUARY 1, 1926

NOTE.—This supplement gives the more important corrections and additions to the text of the Coast Pilot volume since its publication. All changes, given in previous supplements and not repeated herein, are no longer in effect. The supplement is so printed that it may be cut up and the slips inserted on the pages affected. All new information should be inserted in such a manner that it can be removed if changed or canceled by a subsequent supplement.

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GOVERNMENT PRINTING OFFICE
1926

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1926

U.S. Govt.
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IMPORTANT NOTICE.—Supplements to the United States Coast Pilots are issued at least once a year and give all available information for bringing the Coast Pilots up to date. The Coast and Geodetic Survey must depend in a great measure upon outside sources of information pending a complete revision of a volume. Mariners and others will therefore realize the importance and great desirability of cooperation in this work, and are urgently requested to forward to the Director, United States Coast and Geodetic Survey, Washington, D. C., directly or through one of the field stations of the survey, any information affecting the Coast Pilots or charts that may come to their notice, as well as any suggestions that they may have for increasing the value of these publications.

PAGE 18.

Radio Service—Time signals.—The radio transmission is by a 5-kilowatt spark on a wave length of 2,700 meters and by arc on a wave length of 5,260 meters. The weather warnings immediately follow the time signals.

Third paragraph, third sentence, substitute the following: "Information concerning the United States commercial radio stations of the United States should be addressed to the Bureau of Navigation, Department of Commerce, Washington, D. C. For list of the radio stations of the United States, including shore stations, merchant vessels, and Government vessels; Radio Communication Laws and Regulations of the United States; and Amateur Radio Stations of the United States, address the Superintendent of Documents, Government Printing Office, Washington, D. C.; price 15 cents each, excepting Amateur Radio Stations, price 25 cents each." Changes or additions to the stations and to the laws and regulations are published in bulletins issued monthly; price 5 cents per copy or 25 cents per year.

The International List of Radio Stations of the World (edition in English) can be procured from the International Bureau of the Telegraphic Union (Radiotelegraphic Service), Berne, Switzerland. In addition to the information contained in the list of the United States stations published by the Bureau of Navigation, the international list shows geographical locations, normal ranges in nautical miles, radio systems, and rates. Supplements to the international list will be issued monthly and will contain new stations and tables of alterations. Inquiries as to the subscription prices of these lists should be made direct to the Berne bureau at the address given above. Remittances to Berne should be made by international postal money orders.

The insular government radio stations are as follows:

Coastal stations (insular government radio stations) listen in on a 600-meter wave length for ship messages about 10 minutes each hour while open for business

Station	Call letters	Latitude, north		Longitude, east,		Wave lengths (meters)
		°	′	°	′	
Aparri	KZAD	18	21	121	38	550, 600, 1,100, variable.
Balabac	KEW	7	59	117	04	600, 1,200.
Basco	KZAB	20	28	121	59	600, 952, 1,200, 1,500, 1,800, 2,400.
Batangas	KPC	13	47	121	00	400, 600, 800, 950, 1,200, 1,500, 1,900.
Bongao	KEO	5	02	119	46	600.
Cagayan de Sulu	KEV	6	59	118	31	750.
Calapan	KZAC	13	24	121	11	400, 600, 700, 900.
Cebu	KPI	10	18	123	53	600, 750, 950,1,200,1,250,1,600,2.400.
Culion	KPJ	11	53	120	01	600, 900.
Cuyo	KIX	10	50	121	00	600, 850.
Davao	KIF	7	04	125	37	600, 1,100.
Iloilo	KPM	10	42	122	34	600, 950, 1,200, 1,600, 1,950, 2,400.
Isabella de Basilan	KPN	6	42	121	58	200.
Jolo	KIL	6	03	121	00	600, 1,200, 1,905.
Legaspi	KZAJ	13	09	123	45	550, 600, 950, variable.
Malabang	KIZ	7	35	124	05	600, 750, 800, 850.
Malangas	KPV	7	38	123	02	600.
Malita	KPW	6	24	125	36	450, 600, 700.
Mati	KPZ	6	57	126	14	600, 952.
Port Lebak	KPX	6	33	124	03	600, 1,500, 2,000.
Puerto Princesa	KIV	9	45	118	44	600, 900.
San Francisco Camotes	KPY	10	38	124	22	300, 378, 476, 600, 756, 952.
San Jose	KIY	12	21	121	04	600, 1,400.
San Vicente	KZAG					550–1,100, 750.
Siasi	KED	5	33	120	49	450, 600, 650.
Surigao	KZAM	9	48	125	29	550–1,100, 950.
Virac	KZAH	13	47	124	14	600, 750, 950.
Zamboanga	KIW	6	55	122	02	950, 1,250, 1,500, 1,850.

Add the following paragraphs:

Radiocompass bearings.—Naval radiocompass stations will furnish radio bearings to mariners of all vessels equipped with radiotelegraph transmitters. While the use of these bearings should not lead a mariner to neglect other precautions, such as the use of the lead, etc., during a fog, these bearings will greatly reduce the dangers to navigation for mariners who are compelled for any reason to proceed during foggy or misty weather.

These radiocompass stations are provided, primarily, to assist the mariner in closing the land during fog or poor visibility, but they may also be used to obtain the positions of vessels at sea in radiocompass range—about 150 miles—when for any reason positions can not be obtained by other means. The maximum distance for which bearings from these stations are accurate is 150 miles. But accurate positions can not be plotted when more than 50 miles from the shore on Mercator charts, for the Mercator projection introduces a distortion of the true bearing.

Radiocompass stations are divided into two classes: (*a*) Single stations, operating independently and furnishing a single bearing. (*b*) Harbor entrance groups. All stations in harbor entrance groups are connected to and controlled by the master station. All stations of the group take bearings simultaneously, and these bearings are transmitted to the ship requesting them by the control station.

Where only one radiocompass station is available, the mariner may fix his position by two or more bearings from the station with the distance run between, or may use the bearings as a line of position, or as a danger bearing, or the bearing may be crossed with a line of position obtained from an observation of an astronomical body to establish a fix.

Accuracy of bearings.—The accuracy with which bearings can be taken depends on various conditions and, while bearings taken by a station can generally be considered accurate to within 2°, the Government can not accept any responsibility for the consequences of a bearing being inaccurate.

When three stations, so situated as to give intersecting bearings, can be used and the three simultaneous bearings cross with a small "triangle of error," considerable reliance can be placed in the position obtained.

In the case of bearings which cut the coast line at an oblique angle, errors of from 4 to 5° have been reported. Bearings obtained between about one-half hour before sunset and one-half hour after sunrise are generally unreliable. It is probable that the accuracy of a bearing is also affected if the ship's transmitting instrument is not adjusted to the correct wave length. Bearings signaled as "approximate" or "second class" should be regarded with suspicion as being subject to considerable error.

Wave lengths.—All independent and group radiocompass stations keep watch on 800 meters. Only this wave should be used to call and work with these stations.

Hours of service.—During the first 10 minutes of each hour during clear weather radiocompass stations ordinarily will not be guarding the 800-meter wave. Ships are requested to confine their requests for bearings during clear weather to the remaining 50 minutes of the hour, if practicable. If a station chances to hear a request for a bearing during the first 10 minutes of the hour, the requested bearing will be given. During the remaining 50 minutes of the hour and at all times during inclement weather all radiocompass stations will be continuously guarding the 800-meter wave.

Calling a radiocompass station.—To obtain a bearing from independent radiocompass stations, call the station from which the bearing is desired in the usual manner and request bearings by means of the conventional signal given hereafter. Simultaneous bearings from two or more compass stations can be obtained by making the call include the other compass stations desired. To obtain bearings from the harbor entrance compass stations, carry out the procedure previously given. The compass control station only will answer.

Conventional signals.—The following abbreviated signals will be used:

Signal	Meaning
QTE?	What is my true bearing?
QTE	Your true bearing from ------ radiocompass station was ------ degrees.

The following radiocompass stations will be of use for vessels approaching the west coast of the United States. In plotting bearings furnished by these stations the *position of receiver* must be used. Vessels equipped with a radiocompass may also use these stations as radio beacons. For this purpose a United States naval station will transmit, upon request, its call letter for 45 seconds on 800-meter wave. When the bearing is taken on the vessel, the *position of transmitter* must be used for plotting.

Station	Call letters	Position of receiver		Position of transmitter		Arc of calibration
		Latitude north	Longitude west	Latitude north	Longitude west	
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	*Degrees*
Pachena Point, Vancouver	VAD	48 44 --	125 06 --	-- -- --	--- -- --	--------
Cattle Point, Wash	NFN	48 27 05	122 57 45	48 27 17	122 57 41	120–280
Smith Island, Wash	NFH	48 19 04	122 50 39	48 19 12	122 50 35	0–360
New Dungeness, Wash	NFT	48 10 32	123 07 56	48 10 26	123 08 06	240–115
Tatoosh Island, Wash.[1]	NPD	48 23 41	124 44 13	48 23 28	124 44 04	180–90
Destruction Island, Wash	NOJ	47 40 29	124 29 02	47 40 30	124 29 30	--------
Klipsan Beach, Wash	NZS	46 27 53	124 03 16	46 27 54	124 03 11	195–340
Fort Stevens, Oreg	NPE	46 11 32	123 59 15	46 09 12	123 49 36	175–335
Empire, Oreg	NPF	43 23 03	124 18 58	43 20 38	124 13 36	230–10
St. George Point, Calif	NYW	41 47 00	124 15 05	-- -- --	--- -- --	178–10
Eureka, Calif	NPW	40 41 49	124 16 33	40 41 45	124 16 19	204–10
Point Reyes, Calif.[2]	NLG	38 02 13	122 59 36	38 02 10	122 59 36	210–2
Point Montara, Calif.[2]	NLH	37 32 02	122 31 07	37 32 04	122 31 05	185–292
Farallon Island, Calif.[2]	NPI	37 41 59	122 59 56	37 41 52	123 00 00	0–360
Point Arguello, Calif.[3]	NPK	34 34 38	120 38 32	34 34 38	120 38 41	170–360
Point Hueneme, Calif	NMD	34 08 43	119 12 30	34 08 43	119 12 12	135–305
Point Fermin, Calif	NPX	33 42 19	118 17 37	33 42 22	118 17 36	90–290
Point Loma, Calif	NPL	32 42 21	117 15 17	32 44 15	117 03 53	85–250
Imperial Beach, Calif	NPL	32 35 14	117 07 54			182–331

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[1] Bearings furnished in the sector 232 to 264° should be used with caution until reported unreliability has been investigated.

[2] The San Francisco entrance stations are under the control of the Point Montara radio station.

[3] The calibrated area between 135 and 160° is overland, and bearings in this sector should, therefore, be used with caution until several months of checking have shown what accuracy may be expected there.

NOTE.—The arc of calibration is a sector of the circle of which the compass coil at the radio station is the center; the bearings are from the station (clockwise). Compass bearings are reliable only when they fall within the calibrated arcs.

PROCEDURE IN DETAIL

(*a*) A ship calling the radiocompass station or compass-control station should make the abbreviation "QTE?" ("What is my true bearing?") This request will be answered by the radiocompass station or control station, and when ready to observe the radio bearing it will send the signal "K," indicating to the ship to commence "testing"; that is, repeating its distinguishing signal for a period of 50 seconds. The signal should be made slowly with the dashes considerably prolonged.

(*b*) The testing should be made on 800 meters, upon the completion of which the ship should await reply from the radiocompass station.

(*c*) The radiocompass station or control station will then reply, repeating the abbreviation "QTE" ("Your true bearing from ——— was ——— degrees"), followed by the bearing in degrees given by a group of three figures 000 to 359, indicating the true bearing in degrees of the ship station from the radiocompass station, and then the time group giving the time of observations in local standard time. In the case of more than one radiocompass connected by land line, only the station originally called will answer. This station will combine all the bearings taken by itself and associated stations into one message, which gives each bearing observed immediately after the name of the station making the observation. *All compass stations transmit on 800 meters.*

Danger from reciprocal bearings.—Attention is invited to the fact that when a single bearing is furnished there is a possibility of an error of approximately 180°, as the operator at the compass station can not always determine on which side of the station the vessel lies. Certain radiocompass stations, particularly those on islands or extended capes, are equipped to furnish two corrected true bearings for any observation. Such bearings when furnished vessels may differ by approximately 180°, and whichever bearing is suitable should be used. (See table giving "arc of calibration.")

Caution.—Mariners receiving bearings which are evidently the approximate reciprocal of the correct bearing should never attempt to correct these bearings by applying a correction of 180°, as such correction would not include the correction necessary on account of deviation at the compass station. An error of as large as 30° may be introduced by mariners applying an arbitrary correction of 180° to such bearings. Vessels receiving bearings manifestly requiring an approximate 180° correction should request the other bearing from the radiocompass station if not previously furnished.

Bearings, except in the case of approximate reciprocal bearings, should be accurate within 2° of arc, provided the transmitting equipment on board vessels is tuned sharply to 800 meters. Operators should use sufficiently wide coupling to obtain low decrement. If radio transmitters are not tuned sharply, it is difficult to obtain bearings that are sufficiently accurate for navigational purposes. When bearings from three or more compass stations are not over 2° of arc in error, but do not meet at a fixed point, the geometric center of the triangle formed by the bearings can generally be taken as the approximate position of the vessel.

Mariners until thoroughly familiar with the system are advised to use radiocompass stations frequently, especially in clear weather, when positions of vessels can be accurately fixed in order to accustom operators to the procedure and to acquaint themselves with the degree of accuracy and dependability of bearings furnished by the radiocompass stations.

Reports.—In order that the operation of shore radiocompass stations may be checked, mariners obtaining bearings are requested to forward a brief report to the Director Naval Communications, Navy Department, Washington, D. C., containing the following particulars: (1) Name of ship. (2) Name of radiocompass station. (3) Date and local standard time at which radio bearing was taken. (4) Bearings given by radio station. (5) Estimated position of ship at above time and dates by methods other than radio. (6) The probable degree of accuracy of the estimated position. (7) Weather conditions at above time. (8) Remarks, if any. (9) Signature of master or responsible navigating officer. There is no charge for bearings furnished by the naval radiocompass stations.

Radio fog signals.—The following radio fog signals are operated on the Pacific coast by the United States Lighthouse Service:

Point Arguello Light Station (lat. 34° 34′ 38″ N., long. 120° 38′ 59″ W.):	
Series of three dashes for	60 seconds.
Silent	45 seconds.
Point Sur Light Station (lat. 36° 18′ 24″ N., long. 121° 54′ 03″ W.):	
Group of dot, two dashes, and dot for	60 seconds.
Silent	90 seconds.
San Francisco Lightship (call letters WWBV) (lat. 37° 45′ 03″ N., long. 122° 41′ 30″ W.):	
Series of two dashes for	60 seconds.
Silent	60 seconds.
Blunts Reef Lightship (call letters WWBU) (lat. 40° 26′ 04″ N., long. 124° 30′ 14″ W.):	
Single dashes for	60 seconds.
Silent	120 seconds.
Cape Blanco Light Station (lat. 42° 50′ 15″ N., long 124° 33′ 36″ W.):	
Group of one dash and one dot for	60 seconds.
Silent	30 seconds.
Columbia River Lightship (call letters WWBQ) (lat. 46° 11′ 01″ N., long 124° 11′ 04″ W.):	
Series of three dashes for	60 seconds.
Silent	30 seconds.
Swiftsure Bank Lightship (call letters WWBO) (lat. 48° 31′ 44″ N., long. 125° 00′ 00″ W.):	
Series of two dashes for	60 seconds.
Silent	30 seconds.

These radio fog signals are intended for the use of vessels equipped with radiocompass. By reason of this radiocompass (also termed radio direction finder) the bearing of the radio fog signal station may be determined with an accuracy of approximately 2° and at distances considerably in excess of the range of visibility of the most powerful coast lights. The apparatus is simple and may be operated by the navigator without the assistance of a radio operator or without knowledge of the telegraph code. The radio direction-finding apparatus consists of a radio receiving set, similar in operation to those used for radio telegraph or telephone reception, and a rotatable coil of wire in place of the usual antenna. By rotating the coil the intensity of the signal received from the transmitting station is caused to vary, and by noting the position of the coil when the signal is heard at its minimum intensity the bearing of the transmitting station is readily obtained.

It is important to note that the bearing of an incoming radio wave is subject to errors not unlike the deviation of a magnetic compass. Those using radio direction finders on shipboard are cautioned to bear these errors in mind and to keep radiocompasses calibrated at all times. This may be done during clear weather by comparing the bearing obtained by radiocompass with the bearing determined by other methods in general use. All radiocompasses are subject to what is called "night effect," an indeterminate error sometimes experienced near nightfall and sunrise.

The signals from the lightships have definite characteristics for identifying the stations, as have the flashing lights and sound fog signals, and bearings may be obtained with even greater facility than sight bearings on visible objects. *The radio fog signals are transmitted on a wave length of 1,000 meters, which is exclusively reserved for this purpose to avoid interference.*

All ships and stations transmit continuously during thick weather and from 9 to 9.30 a. m. and 3 to 3.30 p. m. during clear weather. Blunts Reef, Columbia River, and Swiftsure Bank Lightships also transmit in clear weather for the first 15 minutes of each even hour from 10 p. m. to 6.15 a. m., all one hundred and twentieth meridian time.

The light stations do not maintain radio communication. On the lightships the operators maintain watch on 600 meters for the first 15 minutes of each hour from 8 a. m. to 9.15 p. m., one hundred and twentieth meridian time, except when radio fog signal is in operation. Radio requests for special transmission of radio fog signals for a reasonable time from lightships for the purpose of checking bearings or calibrating the radiocompass should be made during such watch periods, using 600-meter wave.

At about 8 a. m., 12 noon, and 8 p. m. daily each lightship will broadcast, on 600-meter wave lengths, weather reports pertaining to existing weather conditions in the immediate vicinity of the lightship and will furnish such weather reports at other times to vessels requesting them. These reports cover only actual weather conditions, and forecasts can not be furnished.

Masters of vessels making use of the radio fog signals transmitted during clear weather are requested to advise the Superintendent of Lighthouses, San Francisco, Calif., by letter if the increased service is of value to them and if they desire to have such service continued or extended to cover more frequent periods in the future.

A general description of this method of navigation and the instruments required may be obtained from the Commissioner of Lighthouses, Washington, D. C., upon request. The Bureau of Standards Scientific Paper No. 428, the Radio Direction Finder and Its Application to Navigation, may be obtained from the Superintendent of Documents, Washington, D. C., for 15 cents.

PAGE 30.

The elevation of *Piedra Blanca* is 10 feet.

PAGE 53.

Araceli Reef is marked by a red nun buoy.

PAGE 55.

Dumaran.—Last sentence, the three buoys which were removed have been reestablished.

PAGE 61.

The buoy at the entrance to Balingasag Bay has been discontinued.

PAGE 68.

San Antonio Bay.—Recent surveys show the existence of many dangers along the coast, both inshore and offshore. Mariners navigating this section should use only the latest editions of the charts and be guided by them.

PAGE 73.

Balabac has been discontinued as a port of entry.

PAGE 77.

The automatic acetylene light on *Comiran Island* shows one white flash every second.

PAGE 82.

King Roberts Reef.—It is believed that this reef does not exist, and it has been expunged from the chart.

PAGE 89.

A shoal with a least depth of 1 fathom of water was reported to exist 3 miles westward of *Baja Point.* A shoal area with a depth of 2½ fathoms and 4 miles long in an east and west direction has been reported to exist about 8½ miles west of this point.

PAGE 94.

An extensive shoal area approximately 3 miles wide and 23 miles long, which breaks in heavy weather, has been reported to exist about 7 miles westward of *Long Point.* It extends in a northeasterly and southwesterly direction between latitudes 9° 35′ and 9° 52′ N. and longitudes 118° 07′ and 118° 23′ E.

PAGE 95.

It has been reported that *Dry Island,* about 1 mile north of Hen and Chickens, is a rock which bares 2 feet at low water.

PAGE 104.

Inlulutoc Bay.—Line 3, for "Capaos," read "Enterprise"; line 4, for "1,000," read "1,038"; line 5, for "1,216," read "1,222."

PAGE 105.

Cape Ross.—Add the following paragraph:

The bay southward of Cape Ross and between it and Black Head is deep and clear but is exposed to westward and southward. *Bay Rock,* near the head of this bay, is steep-to with a depth of 6½ fathoms 100 yards westward from it.

The Bank.—Line 8, strike out sentence beginning on this line and substitute the following: "The shoalest of these, on which the depth is 6¾ fathoms, lies 1 mile within the edge of the bank in latitude 11° 26′ N. and longitude 118° 58′ E., 27 miles from the nearest part of Palawan. The patches are nearly all steep-to with flat tops."

PAGE 106.

Malampaya Sound.—Lines 7 and 10, for "Blockade Strait" read "Worcester Strait."

Blockade Strait.—Change name to "Worcester Strait." At end of first sentence insert, "which favors the Tuluran side of the strait."

Islands and dangers.—*Diente Point* is steep-to with a very narrow coral reef fringing the shore. A 2¾-fathom coral shoal of small extent, with 8 to 10 fathoms close to it, lies 1,800 yards 333° true from Diente Point. The channel between the shoal and the point is deep and clear. Strike out last sentence and substitute the following: "*Notch Island*, ½ mile northeast of Diente Point, is 188 feet high and is wooded. It is surrounded and connected with the shore southward by a coral reef bare at low water on which lie several rocks visible at all stages of the tide. Another group of rocks, the highest of which is 15 feet, lie on a reef about 250 yards northward of the island."

Tuluran Island is high, rugged, and heavily wooded. Line 3, substitute heights of 1,311 and 1,331 feet for the two peaks mentioned. Line 5, for "Tuluran Table" read "Thumb Peak." Line 6, for "1,033 feet" read "1,066 feet."

Peaked Islet is 270 feet high. The channel between this island and the shore reef is narrow and has a depth of about 2 fathoms.

PAGE 107.

Pyramid Rocks.—Line 5, for "1 fathom" read "¾ fathom."

Bolalo Bay.—A sunken coral reef extends about 800 yards out from the shore at the head of the bay. The anchorage is anywhere inside the bay in 16 to 18 fathoms, mud bottom. It is subject to strong gusts of wind during stormy weather. The bay can be entered by either channel, east or west of Cone and Largon Islands, giving the latter island a good berth to avoid the reef extending out about 300 yards.

PAGE 108.

After information relating to Tenabian Island insert the following:

Turung Island is on the north side of the entrance to Turung Bay and about ¼ mile south of ***Bullock Head***, the extreme point of the peninsula dividing Taitai and Turung Bays. There is a detached coral shoal with a least depth of 2¾ fathoms 360 yards 74° true from the northernmost point of Turung Island and a pinnacle rock with a least known depth of 3 fathoms about 1,400 yards 53° true from Bullock Head.

Eniaran Island.—There is a detached coral shoal with a least depth of 2¾ fathoms 312 yards 188° true from the westernmost point of this island.

PAGE 109.

Alligator Bay.—There is a large dark-colored rock with a least depth of 2¼ fathoms 1,480 yards 219° true from the westernmost point of Palcocoton Island.

PAGE 110.

Directions.—There is a strong tidal current in and out of the sound which, with contrary winds, may cause heavy tide rips in Worcester (Blockade) Strait.

In entering from the north through Endeavor Strait a mid-channel course must be followed. There is a sharp turn when entering the narrowest part of the strait at Chase Head. Great care must be taken to avoid setting on to the shore reef, as there is considerable tidal current at times in this strait. This entrance is entirely practicable for vessels of less than 1,000 tons and saves about 3 miles when coming from the northward.

Page 111.

Port Cataaba (*Kataaba.*)—Good, well-protected anchorage may be found in 5 to 7 fathoms, mud bottom, abreast of Pin Point. This anchorage is free from the dangerous winds blowing through the mountain passes at some of the other anchorages in this region. Care must be taken to avoid the shore reef that extends about 200 yards northeast of White Point Island. These reefs are hard to see on account of the silt carried down by the Kataaba River. Fresh water can be obtained from the small stream eastward of the anchorage. The *Kataaba* (*Kataban*) *River* is a fresh-water stream entering at the southeast corner of the bay. The channel across the mud flats has a depth of about 3 feet. Inside the river a depth of 9 feet can be carried for about 3 miles through mangrove and nipa swamps.

Destacado Rocks.—These rocks are 20 and 12 feet high. There is a ¾-fathom shoal 503 yards 226° true from the southwestern rock.

Page 112.

Jip Rocks.—A 2¾-fathom shoal lies 300 yards northeastward from these rocks.

Pangulasian Island.—Paragraph 2: Shoal water extends 100 yards off the southeast end of Popolcan Island. The channel between this island and the shore reef of Pangulasian Island is 300 yards wide with a depth of 18 fathoms.

Page 113.

Bacuit Bay.—Paragraph 4: Strike out last sentence. Recent surveys have located several hidden dangers in the bay.

Add the following new paragraphs:

The bay between Custodio Point and Flat Rock is entirely filled by coral reefs with a detached ¼-fathom coral shoal midway and 200 yards northward of the line joining the point and rock. The shore reef extends about 100 yards northeastward of Flat Rock, which is 24 feet high.

White Rock, 75 feet high, lies on an extensive coral reef making offshore about midway between Flat Rock and Cudugman Point. The reef extends 400 yards eastward and northeastward, and a coral ridge extends ½ mile from this rock.

Bigun Bay northward and *Cudugman Bay* southward of Cudugman Point are both nearly filled with coral reefs.

Inabuyatan Island.—A group of shoals with a least depth of 5 fathoms lies from ½ to 1 mile northwest of this island. A 3¾-fathom coral shoal rising out of 16 fathoms 1¼ miles due west from this island is the most serious danger to navigation in Bacuit Bay. The bay mentioned in this paragraph is named *Danet Bay.* During the rainy season the streams flowing into this bay bring a large amount of silt, so that the coral reefs are hard to see.

Malpacao Island.—There is well-protected anchorage in 6 to 7 fathoms southeastward of this island. The available anchorage space is restricted by two shoals awash at low water and by the shore reef which makes off 400 yards from the south side of Ciminaytoy Point. The approach to the anchorage is southward of

Malpacao Island, the channel being 600 yards wide between the island and the nearer reef awash. There are reefs in the channel northeastward of the island, and it should not be attempted by strangers.

Lagen Island.—The south and east sides of the island are fringed with coral, and the channel to the eastward is nearly blocked by reefs. Strike out second paragraph and substitute the following: "Two coral reefs awash at low water lie midway between the south end of the island and Long Point. There is another reef awash ½ mile southeast of the island with a 2½-fathom shoal about midway between this reef and the island."

Dibuluan Island.—This island is 545 feet high and has two prominent cliffs on the western side. The shore is fringed with coral, and a number of coral reefs, bare at low water, lie southward and westward of the island.

PAGE 114.

Above information relating to Cadlao Island insert the following new paragraphs:

Depeldet Island, 234 feet high, lies on the edge of the shore reef about 1 mile northwest of Dilarog Point. It is an island at high water only, being connected at low water with the shore by a ridge of gravel and bowlders. A 2-fathom coral patch lies 1 mile northwest of Depeldet Island and the same distance south of Ipil Point. Another reef with a depth of 1¾ fathoms lies ½ mile eastward from the 2-fathom patch.

Corongcorong Bay affords sheltered anchorage during northerly weather for small vessels calling at Bacuit. It is separated from Manmegmeg Bay by a wide coral reef extending out from the shore. Near the edge of this reef several coral bowlders bare about 2 feet at low tide.

Ipil Point, the eastern entrance of Bacuit Bay, is fringed by a coral reef about 100 yards wide. This reef is steep-to and may be passed at a distance of about 300 yards by vessels going around to Corongcorong Bay. Northward of Ipil Point the land rises steeply to a peak 1,543 feet high. This is the highest point of a high ridge over 1 mile long and separated from the highland eastward by a low valley, at the northern end of which is the town of Bacuit.

Dilumacad Island, 780 feet high, is separated from Ubugun Point on Cadlao Island by a channel 600 yards wide with depths of 10 to 12 fathoms. The east side of the island has a sand beach fronted by coral; the entire west side is overhanging cliffs. Two prominent needle peaks lie near the southern end of the island. (End of new paragraphs.)

Cadlao Island.—Calaragnan Point on the west side and Abrupt Point on the east coast of this island are prominent objects. The channel southeastward of the island is 600 yards wide, deep and clear. Change paragraph 5 to read as follows: "The chart shows a 1¾-fathom patch nearly 1 mile southward of Cadlao Island, and also a patch with a depth of 7¼ fathoms 1½ miles easterly from Miniloc Island."

PAGE 115.

East Peak is 1,725 feet high.

Emmit Island.—This island is 190 feet high. Last paragraph, for "Pasco Inlet" read "Baratoan Bay."

Gemelos Islets.—Cange name to "*Bury Islets.*" These are 60 and 70 feet high.

PAGE 120.

Tubbatha reefs are two dangerous reefs, separated by a deep channel about 5 miles wide. The northeastern reef is oblong in shape and incloses a body of water 2 miles wide and 5 miles long. In this lagoon there are depths of 7 to 10 fathoms, with mud bottom, but there are no passages through the barrier reef. Small launches may cross the reef at high tide. Deep water extends close up to the reefs, and there are no anchorages.

As the result of recent extensive surveys by the Coast and Geodetic Survey, the following dangers have been proven not to exist: *Rubi Reef*, *Nicholson Shoal*, and *Rosalia Reef*. They have accordingly been expunged from the chart. The correct position of *Jessie Beasley Reef* is latitude 9° 02′ 11″, longitude 119° 48′ 40″.

PAGE 121.

The results of the recent survey show that *Quesada* or *South Tubbataha Reef* is nonexistent.

PAGE 123.

In 1920 there were plenty of cattle on *Cagayan Sulu Island*, and they could be purchased at market prices.

PAGE 128.

Agusan River.—The rear light of the entrance range has been destroyed and will not be rebuilt. The channel is changing constantly, and a pilot should be employed for entering.

PAGE 139.

Murcielagos Bay.—The channel to the anchorage is marked by two red and two black buoys.

PAGE 142.

Coronado Point.—A shoal with a least known depth of 1¾ fathoms lies 2 miles southwest of Coronado Point and 1¾ miles offshore. There are several coral heads on the shoal, and a bank with 6 fathoms of water over it lies ½ mile farther offshore.

PAGE 143.

The chart reference for Port Santa Maria, Panabutan Bay, and Sibuco Bay should be 4651.

Dulunguin Point.—A shoal, small in area, with a least depth of 16 feet, lies $\frac{8}{10}$ mile southward of Dulunguin Point.

Panabutan Bay—Line 3, strike out sentence, the latest chart, No. 4651, confirms the report.

PAGE 144.

Caldera Bay.—Strike out last sentence and substitute the following: A limited supply of coal is kept here. Add new sentence: Coconut oil tanks are visible from the eastward.

PAGE 145.

The wharf at *Zamboanga* now has a depth of 22 feet along its front with 15 to 17 feet along the side. The arrow of the tidal current indicator on the wharf at Zamboanga points with the current. The current sometimes forms an inshore eddy, and it is only when the arrow is strictly horizontal that it indicates the direction of the current well off the wharf.

A second-class red nun buoy 126°, 437 yards from Zamboanga Light, marks the point of a shoal southeast of Zamboanga wharf.

PAGE 146.

Little Santa Cruz Island.—Second paragraph, third line, for "framed" read "steel."

PAGE 162.

A second-class black can buoy, moored in 7½ fathoms of water, marks the southeastern edge of *Arayat Shoal.*

PAGE 163.

A third-class red nun buoy, moored in 6 fathoms of water, marks the southern part of *Middle Reef.* A beacon has been established by the Walter A. Smith Co. about 437 yards northwest of the shoalest part of the reef.

A beacon established by the Walter A. Smith Co. marks the northwest edge of *Sibulan Reef.*

The reef making off *Cambulong Point* is marked by a beacon situated on its northern edge and about 437 yards inside its outer extremity.

PAGE 167.

A small bowlder-strewn reef surmounted by a rock awash at half tide lies about 300 yards west of Paya Island.

Piratas Rocks are reported to be covered on very high tides.

PAGES 177–178.

The two red and black horizontally striped buoys marking the shoal southward of Malabang and the Pinatayan Shoal have been discontinued.

PAGE 181.

Cotabato River entrance.—The light flashes white every 2 seconds.

PAGE 184.

The steel frame tower for the antennæ of the constabulary radio station is located 2,280 yards 173° true from the center of Lebak Island.

PAGE 185.

The town of *Balonga* is locally known as *Milbuk.* The harbor to the eastward of Pola Point is best approached from the southeast, passing either inside or outside of the 1¾-fathom shoal. The area southward of Pola Point appears foul and bottom is visible.

PAGE 192.

The fixed red light on the beach at Bolton has been discontinued.

PAGE 197.

Davao.—The fixed red light is now shown from a white steel structure on the beach about 400 yards southward of the wharf. The commanding officer of a United States Navy destroyer reports that he found good anchorage 300 yards off the wharf about 1 mile northeastward from the town. The principal products are hemp, coconuts, and kapok. There are two hospitals and a sawmill here.

PAGE 208.

Cape San Agustin.—An occulting white light—thus, light, 12 seconds, eclipse 4 seconds every 16 seconds—visible 14 miles, is exhibited 132 feet above high water from a white steel frame structure erected on a bluff near the southern extremity of Cape San Agustin. Vessels rounding the cape should keep at least 1½ miles off the light to clear the reefs.

Malamaui Road.—A coral shoal with 13 feet over it at mean lower low water has been found in Malamaui Road, south of the western entrance to Port Isabela, 1¼ miles 238° true from Moro Island, right tangent.

PAGE 262.

Port Holland.—Surveys to the westward of Maluso Bay, Basilan Island, disclose the existence of a 3-fathom spot in latitude 6° 33.5′ N., longitude 121° 45.2′ E. It is covered with coral heads and should be avoided. A coral patch in latitude 6° 32.7′ N., longitude 121° 45.4′ E. is covered with 1½ fathoms of water. These are dangers to be avoided in passing from the vicinity of Mataja Island to Port Holland. Certain changes of names of islands westward of Maluso Bay will be made in future editions of charts to conform to local usage. The Basilan Lumber Co. has extended the wharf and made extensive improvements at the plant in Port Holland. The wharf has a face of about 450 feet with depth of 23 to 16 feet alongside, and they maintain a fixed red electric light at its western end.

PAGE 263.

Apparently shoal water is reported to exist 17 miles westward of *Kaludlud Island.* This may be an extension or an off-lying shoal of *Favorite Bank.*

PAGE 264.

Pilas Island.—For 919 feet substitute 560 feet.

PAGE 267.

Jolo Island, line 4, change to “rises 2,665 feet”; and, last line of same paragraph, “the only good watering place is at the town of Jolo; at other places it must either be had from the river at low tide or from wells.”

Page 268.

Insert before "Dalrymple Harbor," Bulicutin Anchorage and Patotol Bay afford good anchorage for small vessels not exceeding about 15-foot draft, being the best protected anchorages in the island of Jolo. Entrance to Bulicutin Anchorage in the daytime is quite feasible, as the water is clear and the edge of the reef is visible. There are no aids to navigation, and to attempt to enter at night would not be advisable. The channel from Bulicutin Anchorage into Patotol Bay is very narrow, crooked, and the water in it is discolored, so that passage through it by vessels of any size is practically impossible until some aids have been placed.

Dalrymple Harbor is the only well-protected anchorage for large vessels in the island of Jolo.

The elevation of *Tulayan Island* is 527 feet.

Page 269.

The P. D. rock shown on some charts 3 miles northeast of Guijangan Island does not exist.

Page 270.

The wharf at *Jolo* has been rebuilt of concrete. Vessels approaching this wharf must be careful to avoid the reefs on the northeast side.

Tulian Island is 113 feet high, covered with brush and small trees.

Page 271.

A shoal with a least depth of 4 fathoms lies ½ mile northwest of the northernmost point of Bubuan Island.

The 3-fathom shoal formerly charted about 5 miles westward of *Cabucan Island* does not exist.

Pantocunan Island.—Strike out the last sentence.

Southwest coast of Jolo—Bunga Point.—Two shoals with 6 to 8 fathoms lie about 1 mile offshore midway between Silangon and Bunga Points. There is a 5-fathom shoal ¾ mile 320° true from Bunga Point.

Parang.—This village is the largest on the south coast of Jolo and is the business center of the most populous section of the island. It is the terminus of a fairly good automobile highway leading to Jolo and another to Jolo via Silangon. In addition to the houses mentioned there are several more substantial structures, including a market, school, and large Chinese general store having a galvanized-iron roof. There is no shipping by water, all communication being by highway to Jolo.

Page 272.

Strike out sentence beginning on line 1 and substitute the following: "Anchorage may be had in 9 fathoms about ⅜ mile from shore, close to some fish traps, with the galvanized iron roof in Parang bearing 10° true (8° mag.) and Tubingantan Point bearing 130 true° (128° mag.). The bottom is coral sand, and the anchorage is exposed during the southwest monsoon."

Line 15, for "Mount Mabintan, 1,519 feet," read "Mount Talipao, 1,532 feet."

Maibun Bay.—Change name to Maimbung Bay.

Directions for Maimbung Anchorage.—Line 5, change sentence to read, "If this passage be taken Dry Bank should not be brought to bear west of north until after Marban Bank bears east in order to clear a 3-fathom spot southwest of Marban Bank." Change last sentence of paragraph to read, "When clear of the 3-fathom spot, steer to pass a little closer to Marban Bank than to Dry Bank to clear a 3-fathom spot off the south end of the latter."

Anchorage.—Add the following: "Smaller craft may anchor a little closer inshore directly off the mouth of the river in 7 fathoms, mud and sand bottom."

PAGE 273.

Teomabal Island.—Line 4, for "1¼ miles" read "2¼ miles."

Patian and Lumbian Islands.—The reef mentioned in the second paragraph is evidently the point of the reef extending southeastward from Teomabal Island.

Garcia Shoal.—For "⅛ mile" read "¼ mile."

Pata Island.—Line 2, for "1,433 feet" read "1,385 feet." Add the following: "The channel between Pata Island and Damocan Islet is clear and has a depth not less than 17 fathoms.

PAGE 274.

Two miles southwest of the southwestern point of Bolipongpong island is a shoal with a least depth of 2½ fathoms.

PAGE 286.

Port Bongao.—A standard concrete beacon with a fixed red light marks the extremity of the reef which extends out into the channel.

PAGE 291.

The small island lying 9 miles northward of Kulassein, in latitude 6° 35′ N., longitude 120° 41′ E., marked "E. D.," is nonexistent.

Recent surveys in this region show important changes from the conditions previously charted. Use only the latest editions of charts Nos. 4722, 4707, and 4200. Sections of these charts showing the results of the surveys are included in Philippine Islands Notice to Mariners, No. 4, December 31, 1925.

PAGE 292.

A shoal with a least depth of 1¼ fathoms is reported to lie in the channel between Basbas Island and Cunilan Islands, 2 miles northeastward of Basbas Island.

PAGE 294.

Pearl Bank.—A rock is reported to lie 7.7 miles 27° from Zau Island light. It is about 6 feet above water, the upper part white. Although it possesses a number of sharp summits, approached from the NW. or SE., it has the appearance of a solitary rock. From a distance it is reported to have the appearance of a number of small fishing boats with spread sails. Later reports question the existence of this rock.

PAGE 303.

Unsang Point is marked by a group flashing light visible 14 miles.

PAGE 306.

Atjeh Rock is marked by a lighted buoy showing a white flash every 3 seconds.

PAGE 307.

Sandakan.—A depth of 3¼ fathoms exists alongside the outer end of the pier extending southeastward from the customs and harbor office at Sandakan. A depth of 2½ fathoms exists alongside the center of the outer end of the pier about 150 yards southwestward of the first-mentioned pier.

PAGE 309.

Taganak Island is marked by an unwatched flashing white light erected on its summit.

PAGE 310.

A shoal with a depth less than 2 fathoms has been reported close eastward of the rock marked by a beacon about 2 miles southward of *Lankayan Island.*

PAGE 315.

Fairway Shoal beacon has disappeared.

PAGE 326.

A tripod beacon with globe top mark painted black and white marks the northeastern side of Outer Shoal.

PAGE 331.

Sandilands Rock light shows a white flash every 3 seconds.

A flashing white light has been established on *Kalampunian Island.*

PAGE 339.

Jesselton.—The light at the end of the main part of the pier is now fixed white.

PAGE 340.

Substitute the following:

COAST PILOTS AND FIELD STATIONS OF THE COAST AND GEODETIC SURVEY

COAST PILOTS

U. S. Coast Pilot, Atlantic Coast, Section A, from St. Croix River to Cape Cod	$0.75
U. S. Coast Pilot, Atlantic Coast, Section B, from Cape Cod to Sandy Hook, including Long Island Sound	.75
U. S. Coast Pilot, Atlantic Coast, Section C, Sandy Hook to Cape Henry, including Delaware and Chesapeake Bays	.75
U. S. Coast Pilot, Atlantic Coast, Section D, Cape Henry to Key West	.75
U. S. Coast Pilot, Gulf Coast, Key West to the Rio Grande	.75
U. S. Coast Pilot, West Indies. Porto Rico, and Virgin Islands	.75
Inside Route Pilot, coast of New Jersey	.30
Inside Route Pilot, Key York to Key West	.30
Inside Route Pilot, Key West to the Rio Grande	.50
U. S. Coast Pilot, Pacific Coast, California, Oregon, and Washington	.75
U. S. Coast Pilot, Pacific Coast, Alaska, Part I, from Dixon Entrance to Yakutat Bay	.75
U. S. Coast Pilot, Pacific Coast, Alaska, Part II, Yakutat Bay to Arctic Ocean	.75

U. S. Coast Pilot, Hawaiian Islands	$0.50
U. S. Coast Pilot, Philippine Islands, Part I, Luzon, Mindoro, and Visayas	.75
U. S. Coast Pilot, Philippine Islands, Part II, Palawan, Mindanao, and Sulu Archipelago	.75

FIELD STATIONS

Boston, Mass., Appraisers Building, 308 Atlantic Avenue.
New York, N. Y., 311–312 Maritime Exchange Building.
New Orleans, La., Room 314, Customhouse.
San Francisco, Calif., Room 306, Customhouse.
Seattle, Wash., Room 202, Burke Building.
Manila, P. I., Intendencia Building.

At these stations complete files of the United States Coast and Geodetic Survey charts, Coast Pilots, Current Tables, Tide Tables, and other publications relating to navigation may be consulted and information affecting navigation obtained without charge. Light Lists, Buoy Lists, and Notices to Mariners are kept for sale or for free distribution to mariners.

PAGE 345.

Fifth Signal.—Lines 2 and 3, for "south over west to north" read "north over west to south."

Eighth Signal.—Line 1, strike out words "strong winds."

MAY 11 1927

Serial No. 383

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
E. LESTER JONES, DIRECTOR

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Suppl.
1927

SUPPLEMENT
TO
UNITED STATES COAST PILOT
PHILIPPINE ISLANDS

PART I

LUZON, MINDORO, AND VISAYAS

JANUARY 1, 1927

NOTE.—This supplement gives the more important corrections and additions to the text of the Coast Pilot volume since its publication. All changes given in previous supplements and not repeated herein are no longer in effect. The supplement is so printed that it may be cut up and the slips inserted on the pages affected. All new information should be inserted in such a manner that it can be removed if changed or canceled by a subsequent supplement.

UNITED STATES
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IMPORTANT NOTICE.—Supplements to the United States Coast Pilots are issued at least once a year and give all available information for bringing the Coast Pilots up to date. The Coast and Geodetic Survey must depend in a great measure upon outside sources of information pending a complete revision of a volume. Mariners and others will therefore realize the importance and great desirability of cooperation in this work, and are urgently requested to forward to the Director, United States Coast and Geodetic Survey, Washington, D. C., directly or through one of the field stations of the survey, any information affecting the Coast Pilots or charts that may come to their notice, as well as any suggestions that they may have for increasing the value of these publications.

PAGE 8.

Strike out two paragraphs relating to coast pilots and substitute the following:

Coast Pilots, relating to surveyed waters of the United States, Porto Rico, Virgin Islands, Alaska, Hawaiian Islands, and the Philippine Islands, contain full nautical descriptions of the coasts, harbors, dangers, and directions for coasting and entering harbors. At intervals of about one year supplements are issued, containing the more important corrections since the publication of the volume. The supplements are printed on one side of the paper only, so that they may be cut and pasted in the appropriate places in the volume. Supplements and other corrections for any volume can be furnished, free of charge, on application to the Coast and Geodetic Survey, Washington, D. C., or any of its field stations, provided the volume itself has not been superseded by a subsequent edition.

After paragraph relating to tide tables insert the following new paragraph:

Current Tables, which have heretofore been issued as a part of the Tide Tables, are now published separately as Current Tables, Atlantic Coast of the United States, and Current Tables, Pacific Coast of the United States.

PAGE 28.

Time signals.—Signals are not sent on Sundays and holidays.

PAGE 29.

Time signals.—Lines 1 and 2, the radio transmission is on wave lengths of 2,677 and 5,260 meters. Weather bulletins and navigational warnings follow the time signals.

Strike out paragraph and table relative to radio service and substitute the following:

Radio service.—A list of the radio stations of the United States (including shore stations, merchant vessels, and Government vessels), Radio Communication Laws and Regulations of the United States, and Amateur Radio Stations of the United States are published by the Bureau of Navigation, Department of Commerce, Washington, D. C. Either of the first two publications can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., price 15 cents each; the last one, 25 cents.

Changes or additions to the stations and to the laws and regulations are published in bulletins issued monthly; price 5 cents per copy or 25 cents per year.

The International List of Radio Stations of the World (edition in English) can be procured from the International Bureau of the Telegraphic Union (Radiotelegraphic Service), Berne, Switzerland. In addition to the information contained in the list of the United States stations published by the Bureau of Navigation, the international list shows geographical locations, normal ranges in nautical miles, radio systems, and rates. Supplements to the international list will be issued monthly and will contain new stations and tables of alterations. Inquiries as to the subscription prices of these lists should be made direct to the Berne bureau at the address given above. Remittances to Berne should be made by international postal money orders.

Radio stations maintained by the United States Army or Navy in the Philippine Islands handle Government business exclusively.

Stations open to general public service (commercial traffic) are listed in the following table. Station KZRC at Manila is operated by the Radio Corporation of the Philippines and furnishes continuous service. All other stations are operated by the Insular Government and are under the control of the Bureau of Posts, being operated in connection with the land wire and cable service of that bureau. Operators of these stations listen in on 600-meter wave for ship messages about 10 minutes of each hour while open for business.

Station	Call letters	Latitude north		Longitude east		Wave lengths
		°	′	°	′	*Meters*
Apari	KZAD	18	21	121	38	550, 600, 850, 1, 100, variable.
Balabac	KEW	7	59	117	04	600, 1,200.
Basco	KZAB	20	28	121	59	600, 952, 1,200, 1,500, 1,800, 2,400.
Batangas	KPC	13	47	121	00	400, 600, 800, 950, 1,200, 1,500, 1,900.
Bongao	KEO	5	02	119	46	600.
Cagayan de Sulu	KEV	6	59	118	31	750.
Calapan	KZAC	13	24	121	11	400, 600, 700, 900.
Cebu	KPI	10	18	123	53	600, 750, 950, 1,200, 1,250,1,600, 2,400.
Culion	KPJ	11	53	120	01	600, 900.
Cuyo	KIX	10	50	121	00	600, 850.
Davao	KIF	7	04	125	37	600, 1,100.
Iloilo	KPM	10	42	122	34	600, 950, 1,200, 1,600, 1,950, 2,400.
Infanta	KZBP	14	45	121	39	600, 800, 1,000, 1,200, 1,400, 1,600, 1,800, 1,950, 2,100.
Isabella de Basilan	KPN	6	42	121	58	200.
Jolo	KIL	6	03	121	00	600, 1,200, 1.905.
Legaspi	KZAJ	13	09	123	45	550, 600, 950, variable.
Malabang	KIZ	7	35	124	05	600, 750, 800, 850.
Malangas	KPV	7	38	123	02	600.
Malita	KPW	6	24	125	36	450, 600, 700.
Manila	KZRC	14	35	120	58	600, 2,400.
Mati	KPZ	6	57	126	14	600, 1.050.
Port Lebak	KPX	6	33	124	03	600, 900, 1,500, 2,000.
Puerto Princesa	KIV	9	45	118	44	600, 900.
San Francisco Camotes	KPY	10	38	124	22	300, 378, 476, 600, 756, 952.
San Jose	KIY	12	21	121	04	600, 1,400.
San Vicente	KZAG					550–1,100, 750, 800.
Siasi	KED	5	33	120	49	450, 600, 650.
Surigao	KZAM	9	48	125	29	550–1,100, 950.
Virac	KZAH	13	47	124	14	600, 750, 950.
Zamboanga	KIW	6	55	122	02	950, 1,250, 1,500, 1,850.

Radiobeacons (maintained by the U. S. Lighthouse Service) and *radiocompass stations* (maintained by the U. S. Navy) are operated at numerous points on the Pacific coast of the United States.

These aids to navigation, which will be of use to vessels approaching the west coast of the United States, are listed and described in United States Coast Pilot, Pacific Coast, in the light and buoy lists published by the United States Lighthouse Service, and in Hydrographic Office Publication No. 205.

PAGE 37.

Forest Belle Rock is reported as not existing and has been expunged from the charts.

PAGE 38.

Bashi Rocks are reported as not existing and have been expunged from the charts.

A reef 6 miles long has been reported to exist in latitude 20° 25′ N., longitude 119° 23′ E. No further details were given. Later reports give the existence of this reef as doubtful.

PAGE 41.

The Babuyan Islands.—Owing to the reported uncertainty of the position of this group, including Wyllie Rocks, and the uncertainty of the currents in the vicinity, these rocks should not be approached closer than 10 to 15 miles.

PAGE 43.

Port San Pio Quinto.—Paragraph 2, line 7, for "6 or 8 fathoms" read "5¾ fathoms."

PAGE 44.

Line 8 (from bottom), for "A group occulting white light, visible 15 miles" read "A group flashing white light, visible 24 miles."

PAGE 60.

Line 8 (from bottom), strike out words "supporting a square white day mark."

PAGE 61.

Balingasag Bay.—The black can buoy, mentioned in the supplement dated January 1, 1924, as marking the north side of the entrance, has been discontinued.

PAGE 64.

The channel into Port Masinloc north of Salvador Island is marked by 2 red and 4 black buoys. A small wharf extends out from the point about 1 mile southward of the town of Masinloc.

PAGE 68.

Cubi Point.—The red buoy has been changed to a gas buoy showing one white flash every three seconds.

Page 70.

Los Cochinos.—The northern channel between the rocks is obstructed by a sunken rock a few meters east of mid-channel. The least depth on the rock is ½ fathom.

Guardia Shoal.—The gas buoy has been replaced by a black second-class can buoy.

Pages 72–73.

The naval authorities have established a torpedo range between San Nicolas Shoal and Sangley Point, described as follows: “East end located 4,500 yards 280° true from Sangley Point Light. Range extends from there 3,500 yards 241° true and consists of spar buoys at 0, 1,000, 2,000, 2,500, and 3,000 yards and a nun buoy at 3,500 yards which for S/Ms is the firing point. Range may later be extended in direction of San Nicolas Shoal. Range lies south of traffic between San Nicolas Shoal and Manila Harbor.”

Page 73.

Sangley Point.—The shoal making southward of Sangley Point has been dredged to a depth of 22 feet, the inner and outer edges of the channel at this point being marked by buoys.

Sangley Point Light is now visible 13 miles. It is obscured, over an arc of 8° from 66 to 74° true.

Manila, fourth paragraph: Anchorage outside the breakwater is restricted to the area northward of a line bearing 255° from the flashing red light on the south end of the south breakwater.

Quarantine.—The disinfecting and detention station is at Mariveles, but vessels having no infectious or contagious disease aboard await pratique off the breakwater entrance at Manila.

Breakwaters.—It is proposed to protect the south side of Manila Harbor by a breakwater. The part under construction extends about 1,250 yards 242° true from a point on the shore 200 yards south of Fort Malate.

Page 75.

Dredging operations are under way in Canacao Bay, and no reliance should be placed on the charted positions of the buoys, as they are liable to be shifted. Mooring buoys Nos. 21, 22, 23, 24, 25, and 26 should be expunged from the chart. They no longer exist, or have been moved farther into the bay. A lighted buoy, fixed white, has been placed 200 yards 71° from the end of the dock at the Cavite Navy Yard.

Compass ranges.—Additional bearings have been determined, as follows:

	°	′
South radio to Mount Sungay	161	38
South radio tower to Mount Maquiling	142	00
South radio tower to Mount Banahao	127	07
South radio tower to Mount Susundalaga	115	15
South radio tower to Mount Sembrano	103	07
South radio to Las Pinas Church	97	21
South radio tower to Paranaque Church	83	42
Sangley Light to Cavite water tank	176	00

The bearings (true) of the ranges formed by the radio towers themselves are as follows:

	°	′
Northeast tower to south tower	215	45
Northwest tower to south tower	155	45
Northwest tower to northeast tower	95	45

The towers, however, are very close together, of open steel construction, and are more or less flexible, being subject to temperature and wind movements which, with the probable error of determination, may introduce an uncertainty of as much as 1° into the observations of the bearings. Particular care must also be taken to get good contacts; as the towers are of equal size, the nearer one is liable to obscure the actual contact of the range for an appreciable interval.

PAGE 82.

Lucena.—Paragraphs 2, 3, and 4: The fixed red light has been discontinued, and the tower has been removed.

PAGE 83.

The black buoy marking the extreme southern edge of the reef making out from Pagbilao Bay has been discontinued.

PAGE 85.

Pitogo.—A fixed red light, visible 7 miles, is shown from the church tower.

PAGE 103.

Casiguran Light (fixed red), visible 7 miles, is exhibited from a standard concrete beacon on the beach in front of Casiguran Church.

PAGE 104.

Bulan.—A fixed red light is displayed from a 28-foot concrete beacon back of the beach, height 32 feet above high water, visible 7 miles over an arc of 164° from 345 to 140° true.

Sorsogon.—The Commercial Pacific Cable Co. has established a triangular beacon painted white, which, with a similar mark on the cable hut ashore, indicates the line of their cable at Sorsogon. Position of beacon latitude 12° 57′ 47″ N., longitude 124° 00′ 10″ E. The cable at Bacon is not marked, but two positions on the line are given as follows: Latitude 13° 03′ 05″ N., longitude 124° 02′ 44″ E.; latitude 13° 05′ 30″ N., longitude 124° 06′ 14″ E. Vessels are warned to keep clear of the cable.

PAGE 106.

San Bernardino Strait.—Current tables for this strait for 1927 are issued as a supplement to the Pacific Coast Current Tables. This station will be included in subsequent issues of the tables, beginning with the year 1928.

PAGE 125.

Directions for Daet River.—The channel buoys have been discontinued.

Page 132.

Lamit Islands, second paragraph: The anchorage southward of the western Bani Island is obstructed by a 1½-fathom shoal. Good anchorage may be found southward and southwestward of Anchor Island in 4 to 8 fathoms, sticky mud bottom.

Directions, second paragraph: The west end of the western Bani Island can be rounded at a distance of ¼ mile. The anchorage southward of the island is obstructed by a shoal and can only be used by small vessels.

A reef with a depth of about 2½ fathoms lies ½ mile 90° from the summit of Anchor Island. This danger lies about in the middle of the channel east of the island.

Page 150.

A fixed red light is exhibited from a white concrete beacon on the beach at Sabang.

Page 153.

Rapurapu Strait.—The buoy formerly marking the south edge of Derickson Reef has been moved to the south edge of the 2½-fathom shoal southward of Derickson Reef.

Page 154.

Batan Harbor.—The spar buoy marking the 7½-foot shoal off the wharf has been discontinued.

Coal Harbor.—The channel leading to the wharf is marked by two black and three red buoys.

Page 168.

Pinamalayan.—Paragraph 2, last sentence: The fixed red light has been made an official light. It is displayed from a standard concrete pillar, painted white. Elevation 33 feet, visible 7 miles.

Page 175.

Panagatan Cays.—Both cays are wooded.

Page 179.

Mangarin Bay.—Additional information: Good water may be obtained, but only in limited amounts and inconveniently. Supplies are not obtainable. Some provisions may be secured from the sugar company's stores. There are no stevedoring facilities. Vessels must enter and clear from Manila, there being no customhouse at this port.

Page 181.

Shoals off Magarin Wharf.—The outer 1½-fathom shoal is marked by a black can buoy moored in 27 feet of water, mud bottom.

Page 210.

Iloilo, Pilotage, second paragraph: The Iloilo City Light has been permanently discontinued.

Page 211.

Siete Pecados.—Line 5: A red nun buoy marks the ¼-fathom shoal southward of the islands.

Page 214.

Iogiog Bank.—A red nun buoy marks the northern end; a black can buoy marks the eastern side opposite Pandan Point; and a gas buoy showing 1 white flash every 3 seconds marks the southern end of this bank.

Page 216.

New Washington.—The entrance to the Lagatic River is now marked by one red and one black buoy.

Page 233.

Pulupandan.—The wharf at Pulupandan, on the south side of Pandan Point, has 26 feet of water alongside at low water, mud bottom. Ocean-going vessels call here for sugar during the milling season. The best approach is from the southward. Round the gas buoy which marks the south end of Iogiog Bank and steer a course about 21° for the head of the wharf. Anchor about 100 yards off the fish traps with the Ma-ao Dock bearing 16° true and the old dock bearing 90° true. During the northeast monsoon a vessel seldom if ever swings inshore on the turn of the tide, and loading from lighters is greatly facilitated by the smoother water obtained in anchoring close inshore. In going alongside the wharf, a south running tide should be chosen and the port anchor dropped well off the wharf. Customs inspectors and stevedores are usually brought from Iloilo and a vessel can save time by arranging to clear without returning to that port. Practically no supplies can be obtained at Pulupandan.

Page 238.

Dumaguete.—A stone jetty with dock has been constructed at the northern end of Dumaguete, near the stream northward of Stillman Institute. The jetty is approximately 1,000 feet long, extending east and northeastward. The end of the dock is 50 feet wide, with a depth of 3 fathoms alongside.

Page 239.

A black can buoy marks the edge of the shoal water off Canamay Point at the south side of South Bais Bay.

Page 240.

A red nun buoy marks the edge of the shoal water southeastward of Arboles Point.

The wharf of the Central Azucarera de Bais is on the south shore of South Bais Bay.

Page 242.

A fixed red light is displayed from a concrete beacon on the beach at Guijulngan.

Page 243.

Refugio Island.—A black can buoy marks the edge of the reef northward and a red nun buoy southward of the island.

PAGE 245.

Danao River.—A fixed red light is shown from a concrete beacon near the ruins of the wharf.

PAGE 247.

Malapascua Island.—Malapascua Light, flashing white every 3 seconds, is exhibited, 112 feet above high water, from a white steel framed tower.

PAGE 249.

Tuburan Bay.—A set of white triangular range marks having a black vertical stripe through the center have been erected on the beach. The marks in range bearing 142° true (141° mag.) will lead between the reefs to the anchorage.

PAGE 250.

Asturias.—The diamond-shaped beacons mark the channel between the reefs. Steer midway between the beacons, heading for the barrio of Langob on a 113° true (112° mag.) course.

Balamban.—A fixed red light, visible 7 miles, is exhibited from a white concrete pillar erected on the beach in front of the town.

PAGE 252.

Dumanjug.—A fixed red light, visible 7 miles, is exhibited from a white concrete pillar erected on the beach at Tangil.

PAGE 260.

Cebu Harbor.—The list of lights, etc., of the Philippine Islands is now published by the Bureau of Commerce and Industry instead of the Bureau of Customs, as formerly.

A small 3¾-fathom shoal of live coral ⅓ mile west of Opon Light is marked by a black and red horizontally striped can buoy.

There are several shoal spots with a least depth of 4¼ fathoms in the northeastern channel. Use only the latest edition of chart 4447.

Bantolinao Point.—Last line, for " beacon " read " black can buoy."

PAGE 261.

Lauis Ledge Lighthouse.—The light is visible over an arc of 239° (from 305 to 184°). The dark sector covers the reef to the northward and around to the southeastward of the lighthouse. The western limit of the shoals off the lighthouse is marked by a red nun buoy.

Directions, northern approach to Cebu.—Lines 5 and 6: For " beacon " read " black can buoy." Strike out last sentence and substitute the following: " When in mid-channel abeam of Opon Light (fixed green) select suitable courses in accordance with chart 4447."

PAGE 262.

Directions, southern approach to Cebu.—Paragraph 2, change first sentence to read: " Vessels from southward should bring San Nicolas Church red light in range with Osmena Fountain City Light (fixed white) and steer for it on a course about 6° true (4° mag.), passing midway, etc." Line 6, for "San Pedro Fort red light " read " San Pedro Fort green light."

PAGE 278.

Tagbilaran.—A 16-foot channel, 50 meters wide, and about ¾ mile long, leading to a stone dock northward of Tagbilaran is marked by seven stone beacons, with perches. The port-hand beacons are four in number, with black square day marks on the perches, and the starboard-hand beacons three in number, with red conical marks on the perches.

PAGE 288.

Good shelter may be found in the channel southward of Gilbert Island in 4 fathoms, smooth bottom, entering from eastward.

PAGE 290.

Caterman.—Vessels usually load at Cawayan. The channel into Cawayan is narrow but is marked by two beacons. The kedge anchor is used to hold the vessels into the swell.

PAGE 291.

Laoang.—Two additional wharves have been built at the town of Laoang.

PAGE 300.

The channel at *Oras River entrance* is shifting. The island formerly in mid-channel has disappeared, and the point on the west side has been extended considerably. The small island farther up the river has been joined to the south shore, thus forcing main channel to the northward. There is a small wharf and camarin near the mouth of the river.

PAGE 314.

Surigao Strait.—The master of the steamer *Narbo* reports that his compasses were affected by "local attraction" while passing through Surigao Strait and along the south coast of Negros en route to Iloilo. The observed azimuth showed that the standard compass varied as much as 7°.

PAGE 325.

Biliran Strait.—A concrete beacon with flashing white light has been placed on the edge of the reef on the southern side of the strait near its narrowest part.

PAGE 338.

Tacloban.—A stone dock, approximately 300 feet long, with a depth of 2½ fathoms alongside, has been constructed at the southwestern end of the water front at Tacloban.

PAGE 339.

Substitute the following:

COAST PILOTS AND FIELD STATIONS OF THE COAST AND GEODETIC SURVEY

COAST PILOTS

	Price
U. S. Coast Pilot, Atlantic Coast, Section A, from St. Croix River to Cape Cod	$0.75
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San Francisco, Calif., Room 305–6, Customhouse.
Seattle, Wash., Room 202, Burke Building.
Manila, P. I., Intendencia Building.

At these stations complete files of the United States Coast and Geodetic Survey charts, Coast Pilots, Current Tables, Tide Tables, and other publications relating to navigation may be consulted and information affecting navigation obtained without charge. Light Lists, Buoy Lists, and Notices to Mariners are kept for sale or for free distribution to mariners.

PAGE 345.

Fifth signal.—Lines 2 and 3: For "south over west to north," read "north over west to south."

Eighth signal.—Line 1: Strike out words "Strong winds."

PAGE 348.

Special regulations for vessels maneuvering in the Pasig River.—Vessels maneuvering in the Pasig River, and not under way, shall carry at night, besides the anchor lights, a red light, which shall be placed 4 feet below the white anchor light in the same vertical line, and also the side lights. As soon as the vessel is under way these lights shall be lowered and the regular masthead light shall be lighted. At daytime the International Code letter "M" shall be displayed until the vessels have cleared the mouth of the river. (C. A. O. 68.)

○

Serial No. 384

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U. S. COAST AND GEODETIC SURVEY
E. LESTER JONES, DIRECTOR

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Suppl.
1927

SUPPLEMENT
TO
UNITED STATES COAST PILOT
PHILIPPINE ISLANDS

PART II

PALAWAN, MINDANAO, AND SULU ARCHIPELAGO

JANUARY 1, 1927

NOTE.—This supplement gives the more important corrections and additions to the text of the Coast Pilot volume since its publication. All changes given in previous supplements and not repeated herein are no longer in effect. The supplement is so printed that it may be cut up and the slips inserted on the pages affected. All new information should be inserted in such a manner that it can be removed if changed or canceled by a subsequent supplement.

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IMPORTANT NOTICE.—Supplements to the United States Coast Pilots are issued at least once a year and give all available information for bringing the Coast Pilots up to date. The Coast and Geodetic Survey must depend in a great measure upon outside sources of information pending a complete revision of a volume. Mariners and others will therefore realize the importance and great desirability of cooperation in this work, and are urgently requested to forward to the Director, United States Coast and Geodetic Survey, Washington, D. C., directly or through one of the field stations of the survey, any information affecting the Coast Pilots or charts that may come to their notice, as well as any suggestions that they may have for increasing the value of these publications.

PAGE 2.

Strike out two paragraphs relating to coast pilots and substitute the following:

Coast Pilots, relating to surveyed waters of the United States, Porto Rico, Virgin Islands, Alaska, Hawaiian Islands, and the Philippine Islands, contain full nautical descriptions of the coast, harbors, dangers, and directions for coasting and entering harbors. At intervals of about one year, supplements are issued, containing the more important corrections since the publication of the volume. The supplements are printed on one side of the paper only, so that they may be cut and pasted in the appropriate places in the volume. Supplements and other corrections for any volume can be furnished, free of charge, on application to the Coast and Geodetic Survey, Washington, D. C., or any of its field stations, provided the volume itself has not been superseded by a subsequent edition.

After paragraph relating to tide tables insert the following new paragraph:

Current Tables, which have heretofore been issued as a part of the Tide Tables, are now published separately as Curent Tables, Atlantic Coast of the United States, and Current Tables, Pacific Coast of the United States.

PAGE 18.

Time Signals.—Line 3, signals are not sent on Sundays and holidays. Line 9, the radio transmission is on wave lengths of 2,677 and 5,260 meters. Weather bulletins and navigational warnings follow the time signals.

Strike out paragraph 3 and table following this paragraph and substitute the following:

A list of the radio stations of the United States (including shore stations, merchant vessels, and Government vessels), Radio Communication Laws and Regulations of the United States, and Amateur Radio Stations of the United Sates, are published by the Bureau of Navigation, Department of Commerce, Washington, D. C. Either of the first two publications can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.; price 15 cents each; the last one, 25 cents. Changes or additions to the stations and to the laws and regulations are published in bulletins issued monthly; price 5 cents per copy or 25 cents per year.

The International List of Radio Stations of the World (edition in English) can be procured from the International Bureau of the Telegraphic Union (Radiotelegraphic Service), Berne, Switzerland. In addition to the information contained in the list of the United States stations published by the Bureau of Navigation, the international list shows geographic locations, normal ranges in nautical miles, radio systems, and rates. Supplements to the international list will be issued monthly and will contain new stations and tables of alterations. Inquiries as to the subscription prices of these lists should be made direct to the Berne bureau at the address given above. Remittances to Berne should be made by international postal money orders.

Radio stations maintained by the United States Army or Navy in the Philippine Islands handle Government business exclusively.

Stations open to general public service (commercial traffic) are listed in the following table. Station KZRC at Manila is operated by the Radio Corporation of the Philippines and furnishes continuous service. All other stations are operated by the insular government and are under the control of the bureau of posts, being operated in connection with the land wire and cable service of that bureau. Operators of these stations listen in on 600-meter wave for ship messages about 10 minutes of each hour while open for business.

Station	Call letters	Latitude north		Longitude east		Wave lengths
		°	′	°	′	*Meters*
Aparri	KZAD	18	21	121	38	550, 600, 850, 1,100, variable.
Balabac	KEW	7	59	117	04	600, 1,200.
Basco	KZAB	20	28	121	59	600, 952, 1,200, 1,500, 1,800, 2,400.
Batangas	KPC	13	47	121	00	400, 600, 800, 950, 1,200, 1,500, 1,900.
Bongao	KEO	5	02	119	46	600.
Cagayan de Sulu	KEV	6	59	118	31	750.
Calapan	KZAC	13	24	121	11	400, 600, 700, 900.
Cebu	KPI	10	18	123	53	600, 750, 950, 1,200, 1,250, 1,600, 2,400.
Culion	KPJ	11	53	120	01	600, 900.
Cuyo	KIX	10	50	121	00	600, 850.
Davao	KIF	7	04	125	37	600, 1,100.
Iloilo	KPM	10	42	122	34	600, 950, 1,200, 1,600, 1,950, 2,400.
Infanta	KZBP	14	45	121	39	600, 800, 1,000, 1,200, 1,400, 1,600, 1,800, 1,950, 2,100.
Isabella de Basilan	KPN	6	42	121	58	200.
Jolo	KIL	6	03	121	00	600, 1,200, 1,905.
Legaspi	KZAJ	13	09	123	45	550, 600, 950, variable.
Malabang	KIZ	7	35	124	05	600, 750, 800, 850.
Malangas	KPV	7	38	123	02	600.
Malita	KPW	6	24	125	36	450, 600, 700.
Manila	KZRC	14	35	120	58	600, 2,400.
Mati	KPZ	6	57	126	14	600, 1,050.
Port Lebak	KPX	6	33	124	03	600, 900, 1,500, 2,000.
Puerto Princesa	KIV	9	45	118	44	600, 900.
San Francisco Camotes	KPY	10	38	124	22	300, 378, 476, 600, 756, 952.
San Jose	KIY	12	21	121	04	600, 1,400.
San Vicente	KZAG					550-1,100, 750.
Siasi	KED	5	33	120	49	450, 600, 650.
Surigao	KZAM	9	48	125	29	550-1,100, 950.
Virac	KZAH	13	47	124	14	600, 750, 950.
Zamboanga	KIW	6	55	122	02	950, 1,250, 1,500, 1,850.

Radiobeacons (maintained by the United States Lighthouse Service) and *radiocompass stations* (maintained by the United States Navy) are operated at numerous points on the Pacific coast of the United States.

These aids to navigation, which will be of use to vessels approaching the west coast of the United States, are listed and described in United States Coast Pilot, Pacific Coast, in the light and buoy lists published by the United States Lighthouse Service, and in publication No. 205 of the Hydrographic Office, United States Navy.

PAGE 30.
The elevation of *Piedra Blanca* is 10 feet.

PAGE 53.
Araceli Reef is marked by a red nun buoy.

PAGE 55.
Dumaran.—Last sentence, the three buoys which were removed have been reestablished.

Green Island Bay.—Two sunken rocks are reported to lie 2 miles southeastward from Barbacan Point and about halfway between Flat and Shell Islands.

PAGE 61.
The buoy at the entrance to Balingasag Bay has been discontinued.

PAGE 68.
San Antonio Bay.—Recent surveys show the existence of many dangers along the coast, both inshore and offshore. Mariners navigating this section should use only the latest editions of the charts and be guided by them.

PAGE 73.
Balabac has been discontinued as a port of entry.

PAGE 77.
The automatic acetylene light on *Comiran Island* shows one white flash every second.

PAGE 82.
King Roberts Reef.—It is believed that this reef does not exist, and it has been expunged from the chart.

PAGE 89.
A shoal with a least depth of 1 fathom of water was reported to exist 3 miles westward of *Baja Point.* A shoal area with a depth of 2½ fathoms and 4 miles long in an east and west direction has been reported to exist about 8½ miles west of this point.

PAGE 94.
An extensive shoal area, approximately 3 miles wide and 23 miles long, which breaks in heavy weather, has been reported to exist about 7 miles westward of *Long Point.* It extends in a northeasterly and southwesterly direction between latitudes 9° 35′ and 9° 52′ N. and longitudes 118° 07′ and 118° 23′ E.

PAGE 95.
It has been reported that *Dry Island*, about 1 mile north of Hen and Chickens, is a rock which bares 2 feet at low water.

PAGE 104.
Inlulutoc Bay.—Line 3, for " Capaos " read " Enterprise "; line 4, for " 1,000," read " 1,038 "; line 5, for " 1,216," read " 1,222."

PAGE 105.

Cape Ross.—Add the following paragraph:

The bay southward of Cape Ross and between it and Black Head is deep and clear, but is exposed to westward and southward. *Bay Rock*, near the head of this bay, is steep-to with a depth of 6½ fathoms 100 yards westward from it.

The Bank.—Line 8, strike out sentence beginning on this line and substitute the following: "The shoalest of these, on which the depth is 6¾ fathoms, lies 1 mile within the edge of the bank in latitude 11° 26′ N. and longitude 118° 58′ E., 27 miles from the nearest part of Palawan. The patches are nearly all steep-to with flat tops."

PAGE 106.

Malampaya Sound.—Lines 7 and 10, for "Blockade Strait" read "Worcester Strait."

Blockade Strait.—Change name to "Worcester Strait." At end of first sentence insert "which favors the Tuluran side of the strait."

Islands and dangers.—*Diente Point* is steep-to with a very narrow coral reef fringing the shore. A 2¾-fathom coral shoal of small extent, with 8 to 10 fathoms close to it, lies 1,800 yards 333° true from Diente Point. The channel between the shoal and the point is deep and clear. Strike out last sentence and substitute the following: "*Notch Island*, ½ mile northeast of Diente Point, is 188 feet high and is wooded. It is surrounded and connected with the shore southward by a coral reef, bare at low water, on which lie several rocks visible at all stages of the tide. Another group of rocks, the highest of which is 15 feet, lie on a reef about 250 yards northward of the island."

Tuluran Island is high, rugged, and heavily wooded. Line 3, substitute heights of 1,311 and 1,331 feet for the two peaks mentioned. Line 5, for "Tuluran Table" read "Thumb Peak." Line 6, for "1,033 feet" read "1,066 feet."

Peaked Islet is 270 feet high. The channel between this island and the shore reef is narrow and has a depth of about 2 fathoms.

PAGE 107.

Pyramid Rocks.—Line 5, for "1 fathom" read ".¾ fathom."

Bolalo Bay.—A sunken coral reef extends about 800 yards out from the shore at the head of the bay. The anchorage is anywhere inside the bay in 16 to 18 fathoms, mud bottom. It is subject to strong gusts of wind during stormy weather. The bay can be entered by either channel, east or west of Cone and Largon Islands, giving the latter island a good berth to avoid the reef extending out about 300 yards.

PAGE 108.

Pirate Bay.—Line 4, at end of sentence add "except for the ¾-fathom shoal about 300 yards off the north point of Tenabian Island."

Tenabian Island.—Line 4, for "Bay Rock" read "Double Rock."

After information relating to Tenabian Island insert the following:

Turung Island is on the north side of the entrance to Turung Bay and about ¼ mile south of *Bullock Head*, the extreme point of the peninsula dividing Taitai and Turung Bays. There is a detached coral shoal with a least depth of 2¾ fathoms 360 yards 74° true from the northernmost point of Turung Island.

Taitai Bay, the middle one of the three bays mentioned above, affords good anchorage in 10 to 11 fathoms, mud bottom. There are no offshore dangers.

Huron Rock, with a least depth of 2¾ fathoms, lies 1,400 yards 53° true from Bullock Head.

Turung Bay, the southernmost of the three bays, affords protected anchorage and can accommodate several vessels.

Eniaran Island.—There is a detached coral shoal with a least depth of 2½ fathoms 312 yards 188° true from the westernmost point of this island.

Northeast Bay has been surveyed recently, and the dangers are shown on the 1926 edition of chart 4349. At Binaluan, a small village on the eastern shore of the bay, a sawmill is operated when business warrants, and there is an amateur radio station of considerable power.

PAGE 109.

Mallarois Island.—A shoal with a least depth of ½ fathom lies about 400 yards southeastward from this island.

Alligator Bay.—There is a large dark-colored rock with a least depth of 2¼ fathoms 1,480 yards 219° true from the westernmost point of Palcocoton Island.

Inner Sound; Pancol.—The location of this village is now shown correctly on the 1926 edition of chart 4349.

PAGE 110.

Doubtful danger.—The location of Colona Rock, having a least depth of ¼ fathom, is now shown correctly on chart 4349.

Directions.—Malampaya Sound has been surveyed recently, and a new edition of the chart has been issued. Vessels navigating the sound should be guided by the 1926 edition of chart 4349. There is a strong tidal current in and out of the sound which, with contrary winds, may cause heavy tide rips in Worcester (Blockade) Strait.

In entering from the north through Endeavor Strait a mid-channel course must be followed. There is a sharp turn when entering the narrowest part of the strait at Chase Head. Great care must be taken to avoid setting on to the shore reef, as there is considerable tidal current at times in this strait. This entrance is entirely practicable for vessels of less than 1,000 tons and saves about 3 miles when coming from the northward.

PAGE 111.

Port Cataaba (*Kataaba*).—Good, well-protected anchorage may be found in 5 to 7 fathoms, mud bottom, abreast of Pin Point. This anchorage is free from the dangerous winds blowing through the mountain passes at some of the other anchorages in this region. Care must be taken to avoid the shore reef that extends about 200 yards northeast of White Point Island. These reefs are hard to see on account of the silt carried down by the Kataaba River. Fresh water can be obtained from the small stream eastward of the anchorage. *The Kataaba* (*Kataban*) River is a fresh-water stream entering at the southeast corner of the bay. The channel across the mud flats has a depth of about 3 feet. Inside the river a depth of 9 feet can be carried for about 3 miles through mangrove and nipa swamps.

Destacado Rocks.—These rocks are 20 and 12 feet high. There is a ¾-fathom shoal 503 yards 226° true from the southwestern rock.

PAGE 112.

Jip Rocks.—A 2¾-fathom shoal lies 300 yards northeastward from these rocks.

Pangulasian Island.—Paragraph 2: Shoal water extends 100 yards off the southeast end of Popolcan Island. The channel between this island and the shore reef of Pangulasian Island is 300 yards wide with a depth of 18 fathoms.

PAGE 113.

Bacuit Bay.—Paragraph 4: Strike out last sentence. Recent surveys have located several hidden dangers in the bay.

Add the following new paragraphs:

The bay between Custodio Point and Flat Rock is entirely filled by coral reefs with a detached ¼-fathom coral shoal midway and 200 yards northward of the line joining the point and rock. The shore reef extends about 100 yards northeastward of Flat Rock, which is 24 feet high.

White Rock, 75 feet high, lies on an extensive coral reef making offshore about midway between Flat Rock and Cudugman Point. The reef extends 400 yards eastward and northeastward, and a coral ridge extends ½ mile from this rock.

Bigun Bay northward and *Cudugman Bay* southward of Cudugman Point are both nearly filled with coral reefs.

Inabuyatan Island.—A group of shoals with a least depth of 5 fathoms lies from ½ to 1 mile northwest of this island. A 3¾-fathom coral shoal rising out of 16 fathoms 1¼ miles due west from this island is the most serious danger to navigation in Bacuit Bay. The bay mentioned in this praagraph is named *Danet Bay.* During the rainy season the streams flowing into this bay bring a large amount of silt, so that the coral reefs are hard to see.

Malpacao Island.—There is well-protected anchorage in 6 to 7 fathoms southeastward of this island. The available anchorage space is restricted by two shoals awash at low water and by the shore reef which makes off 400 yards from the south side of Ciminaytoy Point. The approach to the anchorage is southward of Malpacao Island, the channel being 600 yards wide between the island and the nearer reef awash. There are reefs in the channel northeastward of the island, and it should not be attempted by strangers.

Langen Island.—The south and east sides of the island are fringed with coral, and the channel to the eastward is nearly blocked by reefs. Strike out second paragraph and substitute the following: "Two coral reefs awash at low water lie midway between the south end of the island and Long Point. There is another reef awash ½ mile southeast of the island with a 2½-fathom shoal about midway between this reef and the island."

Dibuluan Island.—This island is 545 feet high and has two prominent cliffs on the western side. The shore is fringed with coral, and a number of coral reefs, bare at low water, lie southward and westward of the island.

PAGE 114.

Above information relating to Cadlao Island insert the following new paragraphs:

Depeldet Island, 234 feet high, lies on the edge of the shore reef about 1 mile northwest of Dilarog Point. It is an island at high water only, being connected at low water with the shore by a ridge of gravel and bowlders. A 2-fathom coral patch lies 1 mile northwest of Depeldet Island and the same distance south of Ipil Point. Another reef with a depth of 1¾ fathoms lies ½ mile eastward from the 2-fathom patch.

Corongcorong Bay affords sheltered anchorage during northerly weather for small vessels calling at Bacuit. It is separated from Manmegmeg Bay by a wide coral reef extending out from the shore. Near the edge of this reef several coral bowlders bare about 2 feet at low tide.

Ipil Point, the eastern entrance of Bacuit Bay, is fringed by a coral reef about 100 yards wide. This reef is steep-to and may be passed at a distance of about 300 yards by vessels going around to Corongcorong Bay. Northward of Ipil Point the land rises steeply to a peak 1,543 feet high. This is the highest point of a high ridge over 1 mile long and separated from the highland eastward by a low valley, at the northern end of which is the town of Bacuit.

Dilumacad Island, 780 feet high, is separated from Ubugun Point on Cadlao Island by a channel 600 yards wide with depths of 10 to 12 fathoms. The east side of the island has a sand beach fronted by coral; the entire west side is overhanging cliffs. Two prominent needle peaks lie near the southern end of the island. (End of new paragraphs.)

Cadlao Island.—Calaragnan Point on the west side and Abrupt Point on the east coast of this island are prominent objects. The channel southeastward of the island is 600 yards wide, deep and clear. Change paragraph 5 to read as follows: "The chart shows a 1¾-fathom patch nearly 1 mile southward of Cadlao Island, and also a patch with a depth of 7¼ fathoms 1½ miles easterly from Miniloc Island."

PAGE 115.

East Peak is 1,725 feet high.

Emmit Island.—This island is 190 feet high. Last paragraph, for "Pasco Inlet" read "Baratoan Bay."

Gemelos Islets.—Change name to "*Bury Islets.*" These are 60 and 70 feet high.

PAGE 120.

Tubbataha Reefs are two dangerous reefs, separated by a deep channel about 5 miles wide. The northeastern reef is oblong in shape and incloses a body of water 2 miles wide and 5 miles long. In this lagoon there are depths of 7 to 10 fathoms, with mud bottom, but there are no passages through the barrier reef. Small launches may cross the reef at high tide. Deep water extends close up to the reefs, and there are no anchorages.

As the result of recent extensive surveys by the Coast and Geodetic Survey, the following dangers have been proven not to exist: *Rubi Reef*, *Nicholson Shoal*, and *Rosalia Reef*. They have accordingly been expunged from the chart. The correct position of *Jessie Beasley Reef* is latitude 9° 02′ 11″, longitude 119° 48′ 40″.

PAGE 121.

The results of the recent survey show that *Quesada* or *South Tubbataha Reef* is nonexistent.

PAGE 123.

In 1920 there were plenty of cattle on *Cagayan Sulu Island*, and they could be purchased at market prices.

PAGE 125.

Coral Shoal.—Recent soundings show no evidence of this 3-fathom coral patch, and it will be expunged from the charts.

PAGE 128.

Agusan River.—The rear light of the entrance range has been destroyed and will not be rebuilt. The channel is changing constantly, and a pilot should be employed for entering.

PAGE 139.

Murcielagos Bay.—The channel to the anchorage is marked by two red and two black buoys.

PAGE 142.

Coronado Point.—A shoal with a least known depth of 1¾ fathoms lies 2 miles southwest of Coronado Point and 1¾ miles offshore. There are several coral heads on the shoal, and a bank with 6 fathoms of water over it lies ½ mile farther offshore.

PAGE 143.

The chart reference for Port Santa Maria, Panabutan Bay, and Sibuco Bay should be 4651.

Dulunguin Point.—A shoal, small in area, with a least depth of 16 feet, lies $\frac{8}{10}$ mile southward of Dulunguin Point.

Panabutan Bay.—Line 4, strike out sentence. The latest chart, No. 4651, confirms the report.

PAGE 144.

Caldera Bay.—Strike out last sentence and substitute the following: A limited supply of coal is kept here. Add new sentence: Coconut oil tanks are visible from the eastward.

Page 145.

A recent survey shows considerable shoaling westward of Zamboanga wharf, the point of the 3-fathom curve now being about 120 yards 265° true from the light on the wharf. The wharf is being extended westward. The arrow of the tidal current indicator on the wharf at Zamboanga points with the current. The current sometimes forms an inshore eddy, and it is only when the arrow is strictly horizontal that it indicates the direction of the current well off the wharf.

A second-class red nun buoy 126°, 437 yards from Zamboanga Light, marks the point of a shoal southeast of Zamboanga wharf.

Page 146.

Little Santa Cruz Island.—Second paragraph, third line, for "framed" read "steel."

Page 162.

A second-class black can buoy, moored in 7½ fathoms of water, marks the southeastern edge of *Arayat Shoal.*

Page 163.

A third-class red nun buoy, moored in 6 fathoms of water, marks the southern part of *Middle Reef.* A beacon has been established by the Walter A. Smith Co. about 437 yards northwest of the shoalest part of the reef.

A beacon established by the Walter A. Smith Co. marks the northwest edge of *Sibulan Reef.*

The reef making off *Cambulong Point* is marked by a beacon situated on its northern edge and about 437 yards inside its outer extremity.

Page 167.

A small bowlder-strewn reef surmounted by a rock awash at half tide lies about 300 yards west of Paya Island.

Piratas Rocks are reported to be covered on very high tides.

Page 170.

Tambulian Point.—At end of paragraph add the following:

"A wharf of the Santa Clara Lumber Co. is located at the head of this bight. The approach to the wharf, which has 30 feet alongside, is eastward and northward of a 2-fathom shoal lying southeastward of the wharf. A good range for approaching the wharf is to bring the small house on the wharf in line with the east end of a large house on the hill eastward of the sawmill before the prominent bluff at the head of the bay bears anything eastward of 0° true. Steer in on this range, drop anchor in about 15 fathoms, and haul alongside with port side to wharf."

Pages 177–178.

The two red and black horizontally striped buoys marking the shoal southward of Malabang and the Pinatayan Shoal have been discontinued.

Page 181.

Cotabato River entrance.—The light flashes white every 2 seconds.

PAGE 184.

The steel frame tower for the antennæ of the constabulary radio station is located 2,280 yards 173° true from the center of Lebak Island.

PAGE 185.

The town of *Balonga* is locally known as *Milbuk*. The harbor to the eastward of Pola Point is best approached from the southeast, passing either inside or outside of the 1¾-fathom shoal. The area southward of Pola Point appears foul, and bottom is visible.

PAGE 187.

Canalasan Cove.—There is a fixed red light on the wharf at Glan.

PAGE 192.

The fixed red light at Bolton, noted in the 1926 supplement as having been discontinued, has been reestablished.

PAGE 194.

Santa Cruz Point.—Line 4, the fixed red light has been discontinued.

PAGE 197.

Davao.—The fixed red light is now shown from a white steel structure on the beach about 400 yards southward of the wharf. The commanding officer of a United States Navy destroyer reports that he found good anchorage 300 yards off the wharf about 1 mile northeastward from the town. The principal products are hemp, coconuts, and kapok. There are two hospitals and a sawmill here.

PAGE 208.

Cape San Agustin.—An occulting white light—thus, light 12 seconds, eclipse 4 seconds every 16 seconds—visible 14 miles, is exhibited 132 feet above high water from a white steel frame structure erected on a bluff near the southern extremity of Cape San Agustin. Vessels rounding the cape should keep at least 1½ miles off the light to clear the reefs.

Malamaui Road.—A coral shoal with 13 feet over it at mean lower low water has been found in Malamaui Road, south of the western entrance to Port Isabela, 1¼ miles 238° true from Moro Island, right tangent.

PAGE 262.

Port Holland.—Surveys to the westward of Maluso Bay, Basilan Island, disclose the existence of a 3-fathom spot in latitude 6° 33.5′ N., longitude 121° 45.2′ E. It is covered with coral heads and should be avoided. A coral patch in latitude 6° 32.7′ N., longitude 121° 45.4′ E., is covered with 1½ fathoms of water. These are dangers to be avoided in passing from the vicinity of Mataja Island to Port Holland. Certain changes of names of islands westward of Maluso Bay will be made in future editions of charts to conform to local usage. The Basilan Lumber Co. has extended the wharf and made extensive improvements at the plant in Port Holland. The wharf has a face of about 450 feet with depth of 23 to 16 feet alongside, and they maintain a fixed red electric light at its western end.

PAGE 263.

Apparently shoal water is reported to exist 17 miles westward of *Kaludlud Island.* This may be an extension or an off-lying shoal of *Favorite Bank.*

PAGE 264.

Pilas Island.—For "919 feet" substitute "560 feet."

PAGE 267.

Jolo Island, line 4, change to "rises 2,665 feet"; and, last line of same paragraph, "the only good watering place is at the town of Jolo; at other places it must either be had from the river at low tide or from wells."

PAGE 268.

Insert before "Dalrymple Harbor," Bulicutin Anchorage and Patotol Bay afford good anchorage for small vessels not exceeding about 15-foot draft, being the best protected anchorages in the island of Jolo. Entrance to Bulicutin Anchorage in the daytime is quite feasible, as the water is clear and the edge of the reef is visible. There are no aids to navigation, and to attempt to enter at night would not be advisable. The channel from Bulicutin Anchorage into Patotol Bay is very narrow, crooked, and the water in it is discolored, so that passage through it by vessels of any size is practically impossible until some aids have been placed.

Dalrymple Harbor is the only well-protected anchorage for large vessels in the island of Jolo.

The elevation of *Tulayan Island* is 527 feet.

PAGE 269.

The P. D. rock shown on some charts 3 miles northeast of Guijangan Island does not exist.

PAGE 270.

The wharf at *Jolo* has been rebuilt of concrete. Vessels approaching this wharf must be careful to avoid the reefs on the northeast side.

Tulian Island is 113 feet high, covered with brush and small trees.

PAGE 271.

A shoal with a least depth of 4 fathoms lies ½ mile northwest of the northernmost point of Bubuan Island.

The 3-fathom shoal formerly charted about 5 miles westward of *Cabucan Island* does not exist.

Pantocunan Island.—Strike out the last sentence.

Southwest coast of Jolo—Bunga Point.—Two shoals with 6 to 8 fathoms lie about 1 mile offshore midway between Silangon and Bunga Points. There is a 5-fathom shoal ¾ mile 320° true from Bunga Point.

Parang.—This village is the largest on the south coast of Jolo and is the business center of the most populous section of the island. It is the terminus of a fairly good automobile highway leading to Jolo and another to Jolo via Silangon. In addition to the houses mentioned there are several more substantial structures, including a market, school, and large Chinese general store having a galvanized-iron roof. There is no shipping by water, all communication being by highway to Jolo.

PAGE 272.

Strike out sentence beginning on line 1 and substitute the following: "Anchorage may be had in 9 fathoms about 3/8 mile from shore, close to some fish traps, with the galvanized-iron roof in Parang bearing 10° true (8° mag.) and Tubingantan Point bearing 130° true (128° mag.). The bottom is coral sand, and the anchorage is exposed during the southwest monsoon."

Line 15, for "Mount Mabintan, 1,519 feet," read "Mount Talipao, 1,532 feet."

Maibun Bay.—Change name to Maimbung Bay.

Directions for Maimbung Anchorage.—Line 5, change sentence to read, "If this passage be taken Dry Bank should not be brought to bear west of north until after Marban Bank bears east in order to clear a 3-fathom spot southwest of Marban Bank." Change last sentence of paragraph to read, "When clear of the 3-fathom spot steer to pass a little closer to Marban Bank than to Dry Bank to clear a 3-fathom spot off the south end of the latter."

Anchorage.—Add the following: "Smaller craft may anchor a little closer inshore directly off the mouth of the river in 7 fathoms, mud and sand bottom."

PAGE 273.

Teomabal Island.—Line 4, for "1¼ miles" read "2¼ miles."

Patian and Lumbian Islands.—The reef mentioned in the second paragraph is evidently the point of the reef extending southeastward from Teomabal Island.

Garcia Shoal.—For "1/8 mile" read "¼ mile."

Pata Island.—Line 2, for "1,433 feet" read "1,385 feet." Add the following: "The channel between Pata Island and Damocan Islet is clear and has a depth not less than 17 fathoms.

PAGE 274.

Two miles southwest of the southwestern point of Bolipongpong Island is a shoal with a least depth of 2½ fathoms.

PAGE 278.

Parangaan Islet.—Line 2, for "88 feet" read "96 feet."

Maniacolat.—Line 3, for "771 feet" read "704 feet."

PAGE 280.

Tabuan Islands.—Line 8, for "The chart shows a 1-fathom patch" read "A circular reef, awash at half tide, lies."

PAGE 281.

Tawitawi Island.—Change heights of mountains to the following: "Mount Bujimba, 843 feet; Butua, 1,152 feet; Dromedario, 1,803 feet; Thumb Hill, 663 feet.

Islands off the east coast of Tawitawi.—Line 4, for "256 feet" read "219 feet."

PAGE 282.

Tandubato Island.—Line 3, for "528 feet" read "495 feet."

PAGE 284.

Gallo Malo Channel.—Line 3, strike out last two words on this line and remainder of paragraph.

Islands south of Tawitawi.—Line 4, change sentence beginning on this line to read "The outer edge of the reef on which they are situated is very distinct, except off the southeast point of Socubor Island. The 100-fathom curve lies about ¼ mile off the reefs."

Mantabuan and Banaran.—Line 1, strike out "two flat." Add "There is a hill on Mantabuan Island 170 feet high and conspicuous, as it is the only hill on any of the southern islands west of Loran. The trees on it can be seen for 16 miles and afford a good landmark. Both islands have numerous barrios, are partly cultivated, and have wells of rather poor water."

PAGE 285.

Strike out sentence beginning on line 4 and insert: "To navigate this channel, place ship so that the north end of Banaran Island bears 50° true and the east end of Panampanang Island bears 352° true and enter on a 24° true course. Anchorage may be had northwest of the north end of Banaran in 6 fathoms, rocky bottom, or in 12 fathoms, coral sand bottom, ½ mile northeast of it."

Basibuli Reef.—Line 4, change end of sentence to read "may be passed close-to except at the east end, where it is foul and shoals gradually."

Bilatan Island and Bilocbiloc Bank.—Strike out last sentence of paragraph 1 and substitute "The island is of peculiar coral formation, having numerous cylindrical holes from 6 to 10 feet deep and from a few inches to several feet in diameter. It is not inhabited, but is cultivated in the interior, tapioca, papaya, and sugar cane being grown. Some plants yielding rubber grow wild, and there are numerous large trees. The small islands immediately west of Bilitan are inhabited and cultivated."

Tijitiji Bank.—Line 3, for "5 fathoms" read "4 fathoms." Strike out sentence beginning on this line and substitute "This channel may be navigated on a mid-channel course of 351° true, but caution should be used, as the currents are strong and the water frequently roiled."

Balambing Channel.—Line 3, change sentence after semicolon to read "vessels using the channel should do so only when the sun is behind them."

The following *directions* are given for this channel; "Approach the entrance on a 77° true course to pass the point of land southwest of Balambing Point ¼ mile off and continue this course with extreme caution until about 1 mile past the Dulangdulang Rocks. Then change to 118° true for 1 mile, then 90° true for ⅓ mile, and then 43° true for 1.2 miles to the northeast extremity of Bilocbiloc Reef, which must be rounded here with helm hard aport (full right rudder), steadying again on a 137° true and continuing in mid-channel between the reefs. If bound seaward continue along the edge of Bilocbiloc Reef, which may be approached close-to. If bound for Banaran

Island or to the eastern part of Tawitawi Bay, take the wide deep channel just north of Basibuli Reef. If bound toward Buan Island pass through the second channel east of the northeast point of Bilocbiloc Reef on a 322° true course until the channel opens, then head in a northerly direction."

Sanguisiapo.—Line 5, after words "coral runs out," strike out remainder of sentence and substitute the following: "for 2½ miles, there being a 16-foot spot ⅔ mile 299° true from the west end of the island. The 3-fathom curve is ¾ mile northward from the edge of the reef at low water."

Last paragraph, the 2¼-fathom shoal was closely searched for in 1926 but was not found, clear depths of at least 23 feet obtaining over this area.

PAGE 286.

Siminor and Manucmanca.—Paragraph 3, line 6, after words "hauled to," strike out remainder of sentence and insert "40° true, passing ½ mile off."

Bongao Island.—Line 2, for "1,138" read "1,109." Strike out last sentence of paragraph.

Sangasanga Island.—Paragraph 1, strike out last sentence and insert "This passage is clear, has a depth of 2 fathoms but is narrow, and the currents are strong. Throughout its length the deepest water is along the north side of the channel. There are rocks, bare at low water, along the southern shore about halfway along the eastern area and also a group of bare rocks at the bend."

Port Bongao.—A standard concrete beacon with a fixed red light marks the extremity of the reef which extends out into the channel.

PAGE 287.

Line 1, after words "inside of the point," strike out remainder of sentence and insert "that has from 3 to 4 fathoms along its 80-foot face at low water."

Line 9, after words "Thumb Hill," strike out remainder of paragraph and insert "in range with the south tangent of Papahag Island on course 52° true in order to clear the shoals extending from Martinez Point and, when Bongao Light bears 320° true, should steer for the opening on a 315° true course, passing close to the light to avoid the shoal making out from the point of Papahag Island." Add the following: "To enter Port Bongao through Sangasanga Channel, steer a mid-channel course of 265° true between Sangasanga and Papahag Islands and anchor in 6 fathoms 440 yards north of Bongao Light. Although the channel is narrow it has no obstructions, there being 2 fathoms close to the shore.

Balambing.—Line 2, after "in 1871," strike out remainder of paragraph and also the paragraph beginning at bottom of page and ending on page 288, substituting the following: "but it has now been rebuilt and has about 50 houses. Several of the inhabitants specialize in building Moro vintas and sapits, at which they are quite adept."

PAGE 288.

Anchorage.—Line 6, for "there is none" read "there is only one anchorage." At end of paragraph add the following: "This is along the western edge of Tijitiji Reef, opposite the Simonor village of Toubigindanan, in 10 to 12 fathoms, coral bottom, with Thumb Hill and the large conspicuous tree on Laa Island in range."

Tawitawi Bay.—Strike out entire paragraph and substitute, "Tawitawi Bay is full of reefs generally awash at low water, but with many shoals having from 1 to 4 fathoms over them. These shoals so generally cover the bay that practically all navigation is through tortuous and narrow channels. Strangers here should attempt these channels with the sun high up and preferably behind them, when all dangerous shoals may be clearly seen. No prominent ranges are available.

"It is possible for ships of 10 to 12 foot draft to make their way to the small bay north of Buan Island and for vessels of 6 foot draft to approach within ½ mile of the shore of Tawitawi Island east and north of this island. The channels, however, are very narrow and, in the absence of range beacons, are rather difficult to navigate.

"As the chart, the lead, and the lookout are the safest guides for navigating Tawitawi Bay, no sailing directions are given except for Balambing Channel, through which 4 fathoms can be carried, the passage northwest of Banaran Island, which has a least depth of 6 fathoms, and a passage across the bay from north of Banaran Island to the passage between Mantabuan and Latuan Islands.

"*To navigate the latter passage*, from a point 0.8 mile north of Banaran Island bring the north tangent of Basibuli Island in range with the prominent vertical cliff on the north side of Mount Vigia, Bongao Island, and follow this range on course 85° true until Sasa Island bears 145° true; change course here to 95° true for ½ mile, to avoid an 11-foot shoal; then steer 75° true until back on the range and hold it across the bay until Circe Bank bears 305° true. From this point passage to the sea can be made between Mantabuan and Latuan Islands on a 125° true course."

Lupa Island.—Line 2, for "an impracticable channel" read "a small boat channel having a depth of 5 feet at low water."

Buan Island.—Line 2, for "396 feet" read "280 feet." Strike out last sentence of paragraph and insert "Vessels of from 10 to 12 foot draft can easily approach to a point 1 mile southwest of the west end of Buan by a northerly course from the second passage just northeast of Bilocbiloc Reef, and from here can reach the area just northwest of Buan Island on a northeasterly course between numerous rocks and reefs. In the absence of range beacons, great care should be taken in passing the reefs west of Buan."

Simanale Channel.—Strike out the last sentence and substitute "The channel is navigable for shallow-draft launches only, is narrow and tortuous, with numerous rocks, and a controlling depth of 7 feet among the rocks at low water near Carmen Point. The currents near Batobato Island reach a velocity of 5 knots per hour."

Simanale Bay.—Add "Passage can be made on either side of Tusan Bongao Island. The eastern one has a least depth of 3 fathoms and no sharp turns. The western is split by a shoal, awash at low water, into two narrow passages, the northern one being the better. It has a least depth of 9 fathoms, but has several sharp turns, and at times fairly strong currents."

PAGE 290.

Line 3, insert before "settlement of Tataan" the word "ruined." Strike out sentence beginning on this line and substitute sentence, " Of the old fort and houses nothing remains except a few leveled areas now covered with grass, foundations for gun platforms, and a section of a retaining wall across a creek. A road is being constructed from Batubatu, on the south side of Tawitawi Island, to Tataan.

"A portion of the old mole remains, and but little work and expense would be necessary to rebuild a wharf there, deep water being had close to the old mole. The mole is not conspicuous now, but lies a short distance east of a prominent ledge over which there is a small waterfall of good water in all but the driest months of the year."

Supplies.—Strike out the first and second sentences.

Third sentence, insert before "settlement" the word "ruined."

PAGE 291.

The small island lying 9 miles northward of Kulassein, in latitude 6° 35′ N., longitude 120° 41′ E., marked "E. D.," is nonexistent.

Recent surveys in this region show important changes from the conditions previously charted. Use only the latest editions of charts Nos. 4722, 4707, and 4200. Sections of these charts showing the results of the surveys are included in Philippine Islands Notice to Mariners, No. 4, December 31, 1925.

Pangutarang Passage.—The flood current sets westerly and the ebb easterly through this passage, with an average strength of about 2 knots. High tide occurs one hour later than at Jolo.

PAGE 292.

A shoal with a least depth of 1¼ fathoms is reported to lie in the channel between Basbas Island and Cunilan Islands, 2 miles northeastward of Basbas Island.

PAGE 293.

Tablas Shoal.—This shoal has a least found depth of 3 fathoms. This depth is on the south edge of the shoal, the water deepening to the northward.

After paragraphs relating to this shoal insert the following:

"A shoal with a least depth of 7 feet lies about 3 miles eastward of Tubalubac Island. The shoal area with less than 5 fathoms is about 1 mile wide and 2 miles long, extending in a northwesterly direction from the 7-foot spot. From this spot the north tangent of Tubalubac Island bears 275° true and the west tangent of Basbas Island bears 18° true. Recent surveys show that the islands in this locality are incorrectly charted, Tubalubac being about 2 miles northwestward of the present charted position."

Currents.—Between Malicut Island and Sail Rock the flood current sets northwestward and the ebb southeastward, with an average velocity of about 2 knots. The current is strongest in the vicinity of Sail Rock. West of this rock and between the islands to the westward the set is more northerly and southerly.

PAGE 294.

Pearl Bank.—A rock is reported to lie 7.7 miles 27° from Zau Island light. It is about 6 feet above water, the upper part white. Although it possesses a number of sharp summits, approached from the NW. or SE., it has the appearance of a solitary rock. From a distance it is reported to have the appearance of a number of small fishing boats with spread sails. Later reports question the existence of this rock.

PAGE 303.

Unsang Point is marked by a group flashing light, visible 14 miles.

PAGE 306.

Atjeh Rock is marked by a lighted buoy showing a white flash every 3 seconds.

PAGE 307.

Sandakan.—A depth of 3¼ fathoms exists alongside the outer end of the pier extending southeastward from the customs and harbor office at Sandakan. A depth of 2½ fathoms exists alongside the center of the outer end of the pier about 150 yards southwestward of the first-mentioned pier.

PAGE 309.

Taganak Island is marked by an unwatched flashing white light erected on its summit.

PAGE 310.

A shoal with a depth less than 2 fathoms has been reported close eastward of the rock marked by a beacon about 2 miles southward of *Lankayan Island.*

PAGE 315.

Fairway Shoal beacon has disappeared.

PAGE 326.

A tripod beacon with globe top mark painted black and white marks the northeastern side of Outer Shoal.

PAGE 331.

Sandilands Rock light shows a white flash every 3 seconds.

A flashing white light has been established on *Kalampunian Island.*

PAGE 339.

Jesselton.—The light at the end of the main part of the pier is now fixed white.

PAGE 340.

Substitute the following:

COAST PILOTS AND FIELD STATIONS OF THE COAST AND GEODETIC SURVEY

COAST PILOTS

U. S. Coast Pilot, Atlantic Coast, Section A, from St. Croix River to Cape Cod	$0.75
U. S. Coast Pilot, Atlantic Coast, Section B, from Cape Cod to Sandy Hook, including Long Island Sound	.75
U. S. Coast Pilot, Atlantic Coast, Section C, Sandy Hook to Cape Henry, including Delaware and Chesapeake Bays	.75
U. S. Coast Pilot, Atlantic Coast, Section D, Cape Henry to Key West	.75
U. S. Coast Pilot, Gulf Coast, Key West to the Rio Grande	.75
U. S. Coast Pilot, West Indies, Porto Rico, and Virgin Islands	.75
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New York, N. Y., 311–312 Maritime Exchange Building.
New Orleans, La., Room 314, Customhouse.
San Francisco, Calif., Room 306, Customhouse.
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Manila, P. I., Intendencia Building.

At these stations complete files of the United States Coast and Geodetic Survey charts, Coast Pilots, Current Tables, Tide Tables, and other publications relating to navigation may be consulted and information affecting navigation obtained without charge. Light Lists, Buoy Lists, and Notices to Mariners are kept for sale or for free distribution to mariners.

PAGE 345.

Fifth Signal.—Lines 2 and 3, for "south over west to north" read "north over west to south."

Eighth Signal.—Line 1, strike out words "strong winds."

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